INPUT

MARKET FORECAST

Italian Market for Software
and Services

1994-1999

Market Analysis Programme - Europe

Italian Market
for Software and Services

1994-1999

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Abstract

This report provides a detailed analysis of the Computer Software and Services market in Italy.

The computer software and services market is defined by INPUT as comprising eight major sectors, processing services, turnkey systems, applications software products, system software products, professional services, network services, systems operations and systems integration.

The addition of the equipment services sector defines a market referred to as information services.

The report provides analyses and forecasts of the Italian market by vertical industry and cross-industry sectors.

The vertical industry sectors identified comprise, discrete manufacturing, process manufacturing, transportation, utilities, telecommunications, retail distribution, wholesale distribution, banking and finance, insurance, healthcare, education, local government, central government, and business services.

The cross-industry sectors identified comprise, accounting, education and training, engineering and scientific, human resources, office systems and planning & analysis.

Estimates of sector market growth are given for the years 1993 and 1994 together with annual size estimates for each year up to 1999.

Companion reports provide an identical analysis for Germany, France and the United Kingdom. Additionally a complete analysis of the European market by individual country market is also available.

INPUT also publishes detailed reports on the US market for information services and a complete review of the world-wide market.

**Market Analysis Programme –
Europe**

*Italian Market for Software and
Services, 1994-1999*

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Exhibits

I

Introduction

This report is produced as part of INPUT's European *IT Intelligence Service* for the computer software and services industry.

Software and services markets continue to attract widespread attention. This report is designed to assist in achieving a consolidated view of the Italian market.

This report can be read in conjunction with other INPUT reports in order to identify key market and product trends, vendor strategies and opportunities.

The report provides market sizes for 1993 and 1994 with forecasts for each year through 1999.

A
Scope of the Report

This forecast represents an on-going analysis of the software and services market in Italy.

The report contains an analysis and forecast of the total IT budget, including both internal and external IT-related spending. This is split into:

- Equipment sales — expenditure on hardware products

- Equipment services — expenditure on equipment maintenance and environmental services

- Software products — all expenditure on systems software products and applications software product licences

- Other information services — all expenditure on other services such as professional services, systems integration, systems operations, processing services, network services, turnkey systems, and systems software products and applications software product support services

- Communications — all expenditure on IT-related telecommunications equipment or services

- Facilities — IT budget expenditure on overheads such as space, heating, lighting, furniture, vehicles, etc.

- Staff — direct in-house staff costs including any temporary contract labour.

1. Information Services Delivery Modes

INPUT defines eight delivery modes that are referred to in this report as the *software and services market* and an additional delivery mode, *equipment services* which when included with the other eight, are collectively referred to as the *information services market*. The complete list is as follows:

- Professional services
- Systems integration
- Systems operations
- Processing services
- Network services
- Systems software products
- Applications software products
- Turnkey systems
- Equipment services

Spending on software and services is assessed and forecasted in relation to anticipated changes in the level of overall IT budgets.

The market is additionally analysed by industry sectors, cross-industry sectors and by generic product sectors. Exhibit I-1 indicates the relationship between the delivery mode forecasts and the market sector forecasts.

Exhibit I-1

Delivery Mode versus Market Sector
Forecast Content

Delivery Mode	Submode	Market Sectors		
		Industry Sectors	Cross-Industry Sectors	General
Processing Services	Transaction Utility Other	X	X	 X X
Turnkey Systems		X	X	
Applications Software Products		X	X	
Systems Operations	Platform Applications	X X		
Systems Integration		X		
Professional Services		X		
Network Services	Network Applications Electronic Information Services	X X		 X
Systems Software Products				X
Equipment Services				X

Source: INPUT

2.   Industry sectors

The industry sectors:

- Discrete Manufacturing
- Process Manufacturing
- Transportation
- Utilities
- Telecommunications
- Retail Distribution
- Wholesale Distribution
- Banking and Finance

- Insurance
- Healthcare
- Education
- Local Government
- National Government
- Business Services
- Other Industries.

3.   Cross-Industry Sectors

INPUT has identified seven cross-industry market sectors. These sectors or markets involve multi-industry applications:

- Accounting
- Education & Training
- Engineering & Scientific
- Human Resources
- Office Systems
- Planning & Analysis
- Other Cross-Industry.

4.   Generic Sectors

Certain sectors or sub-sectors are considered independent of any industry or cross-industry influence. These are:

- Equipment services
- System software products
- General utility processing services
- General electronic information services.

The full definition of each sector is given in INPUT's Definition of Terms which is included as Appendix C of this report.

B
Methodology

INPUT's methodology for market analysis and forecasting remains consistent with that used in past years.

Vendors and users are surveyed to determine what is being spent on software and services and to anticipate the likely trends in both the short and long term.

1.   Sources

This report is based principally on research activities conducted by INPUT during 1994:

- A vendor research programme of interviews with over one hundred software and services vendors in Italy

- Further vendor and user interviews in Italy to determine trends and opinions within specific market sectors

- INPUT's continuous analysis of the delivery modes and vertical industry sectors comprising the information services market.

Additionally INPUT's extensive library and data-base of information relating to the software and services industry was used.

2.   Market Sizing

The process used to establish the base year market size (total user spending within that year) is shown in Exhibit I-2.

Exhibit I-2

Base Year Market Sizing

```
                    ┌─────────────┐
                    │   Vendor    │
                    │   Revenue   │
                    │   Surveys   │
                    └──────┬──────┘
                           │
                           ▼
┌─────────────┐      ╭───────────╮      ┌─────────────────┐
│ IS Industry │      │   Data    │      │ User Expenditure│
│  Research   │      │ Cleansing │      │     Survey      │
└──────┬──────┘      ╰─────┬─────╯      └────────┬────────┘
       │                   │                     │
       ▼                   ▼                     ▼
             ╭─────────────────────────╮
             │        Project          │
             │   Sample to Industry    │
             ╰────────────┬────────────╯
                          │
    ╭──────────────╮   ╭──────────────╮   ╭──────────────╮
    │  9 Delivery  │   │ Aggregation  │   │ 22 Vertical &│
    │    Modes     │──▶│ of Vendor    │◀──│  CI Markets  │
    ╰──────────────╯   │  Revenues    │   ╰──────────────╯
                       ╰──────┬───────╯
                              ▼
                       ╭──────────────╮
                       │ Adjustment   │
                       │     for      │
                       │ Distribution │
                       │  Channels    │
                       ╰──────┬───────╯
                              ▼
                       ╭──────────────╮
                       │    User      │
                       │ Expenditure  │
                       ╰──────────────╯
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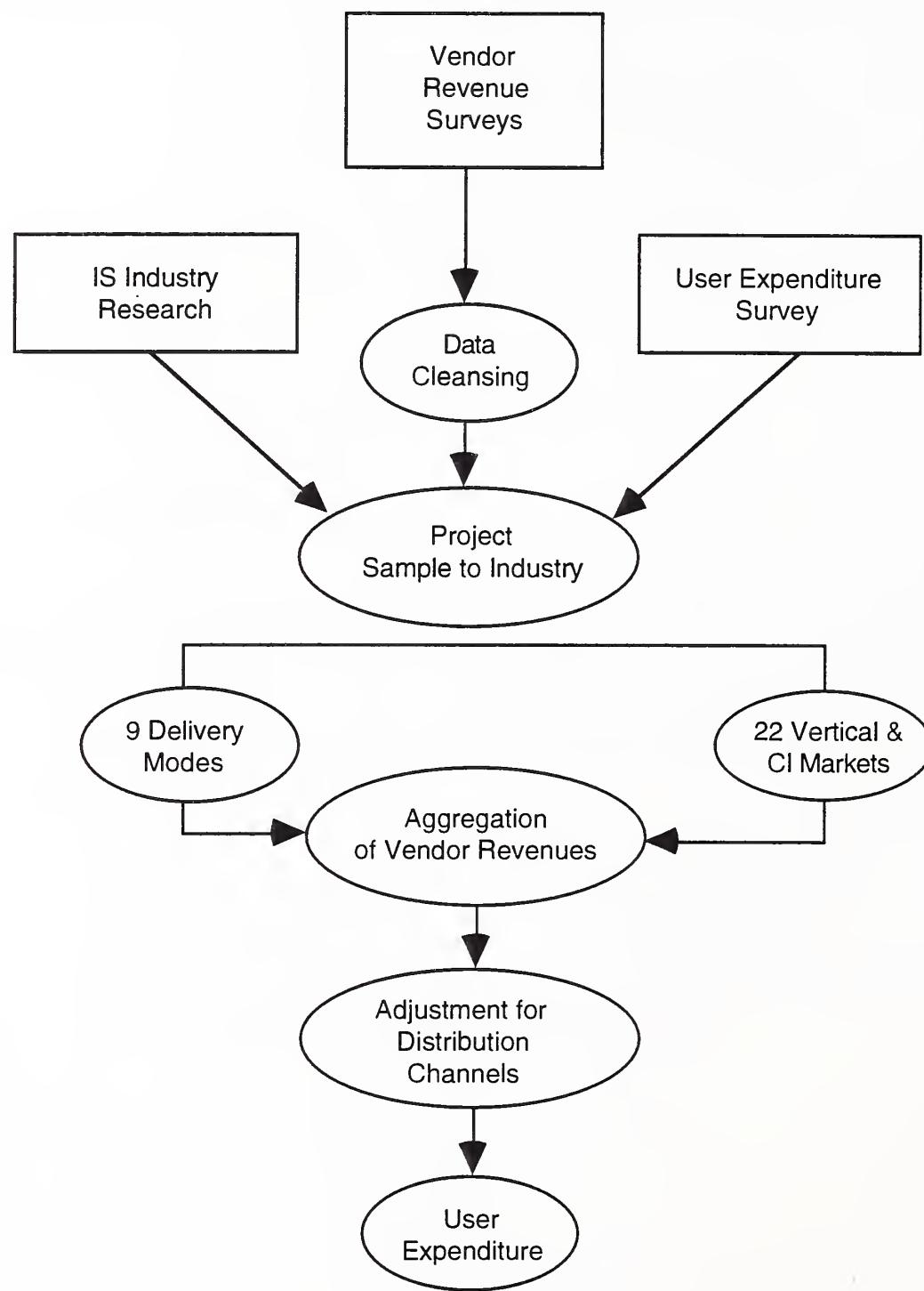
Source: INPUT

INPUT determines 'previous-year' software and services revenues for 9 delivery modes and 22 vertical and cross-industry sectors for over a hundred vendors operating in Italy.

This research process is accomplished through interviews, use of public data such as press articles and annual company reports, and estimates by INPUT consultants.

The industry sector, delivery mode and sub-sector revenues of each vendor are recombined to ensure that there is no double counting or overlap. Only revenues derived from within Italy are included.

Many vendors publish accounts which do not coincide with the end of the calendar-year. INPUT adjusts business generated by these firms to the calendar year for consistency.

The initial local currency data from the vendors analysed is projected to represent the revenues of the entire country market based on INPUT's view of the contribution to be expected from the remaining minor vendors.

Adjustments are made to eliminate errors due to distribution channel overlap or mark-up and to ensure that captive market information is excluded. Captive markets are those revenues which a vendor receives from within the vendor's parent group of companies.

Demographic data have also been used to validate the market sizes. INPUT uses such sources as the *Panorama of EC Industry* published by the European Commission, to check trends in sector expenditures and employee levels in different industries.

The end result is a base year (in this case 1993) software and services market figure representing user expenditure for each of the market sectors or delivery modes analysed.

3. Market Forecasts

In the forecasting step, shown in Exhibit I-3, INPUT surveys IS (Information Systems) executives and finance directors to determine their projected expenditure levels on IT in general and software and services in particular.

Exhibit I-3

Italian Market Forecasts

Source: INPUT
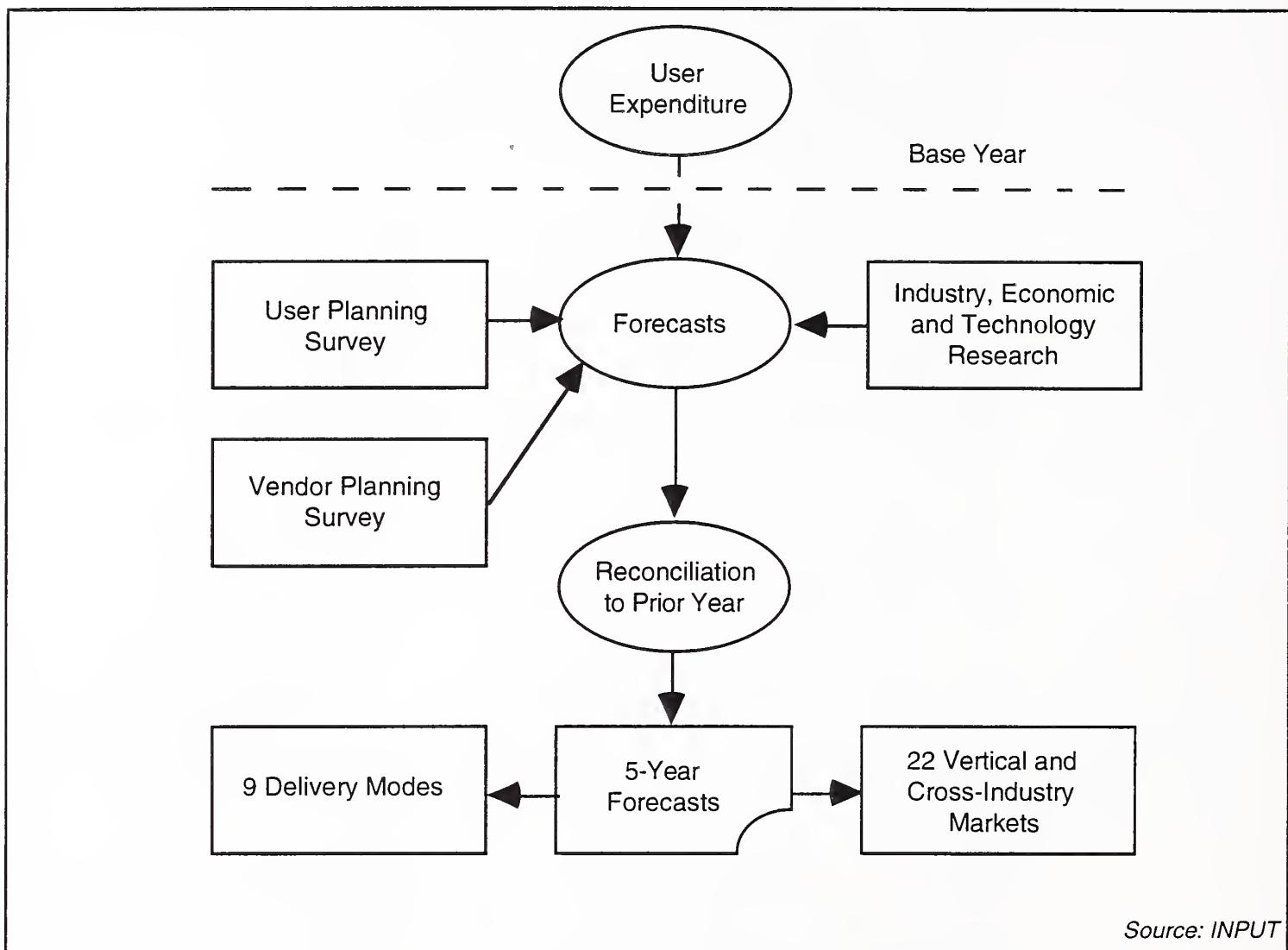
The market model which forms the basis for the forecasts includes a GDP deflator (adjustment for predicted inflation) for Italy.

Economic growth assumptions for Italy and for each major industry sector are also factored into the forecasts.

In addition vendor interviews are conducted to establish opinions of the market and views of the key opportunities.

INPUT consultants add their judgement to the resulting projections, testing the results to ensure they are reasonable.

In particular this phase produces consolidated forecasts for the whole of Italy by consolidating industry forecasts.

C
Report Structure

The remainder of this report is structured in the following way:

Chapter II is an executive perspective offering a summary of key statistics from the report.

Appendix A contains detailed tables of market data and forecasts for Italy provided in DM, US dollars and ECUs.

Appendix B lists the economic assumptions used in the compilation of this analysis and forecast including data used by INPUT in consolidating its total European market report.

Appendix C contains INPUT's definition of terms.

D
Related INPUT Research Programmes and Reports

The following reports contain detailed analysis of each market sector, offering commentary and recommendations for vendors. Further commentary and analysis of market sectors identified in this report may be found in the reports listed below:

1. **European Market Sector Reports**

- European Market for Software and Services 1994-1999.

- German Market for Software and Services 1994-1999.

- French Market for Software and Services 1994-1999.

- UK Market for Software and Services 1994-1999.

- Systems Integration Market Analysis and Forecast, 1994-1999

- Outsourcing Market Analysis and Forecasts 1994-1999

- Software Product Support — European Market Futures, 1994-1999

- Customer Services Market Analysis and Forecasts, 1994-1999

- Industry Sector Forecast Database, 1994-1999

2. **US Reports**

- US Information Services Annual Report

- Forecast Compendium

- US Professional Services Market

- US Systems Software Product Market

- US Processing Services Market

- US Information Systems Outsourcing Market

- US Applications Solutions Market

- US Network Services Market

- US Equipment Services Market

- US Industry Market Reports

- US Cross Industry Market Reports

3.　　World-wide Report

- World-wide Market Forecast, 1993-1998

II
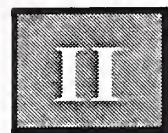
Executive Overview

A
Italian Market Overview

The Italian software and services market is the third largest individual country market in Europe. However, it is only just over half the size of the UK market despite its larger economy measured in GDP indicating the potential for considerable development in the future.

The software and services industry experienced high growth (20% plus per annum) almost from its inception in the early 1970s right through to the end of the 1980s. Subsequently growth has slowed as a result of general economic recession but more especially through strong deflationary forces in IT markets.

Slower growth for software and services markets during the remaining part of the 1990s is forecast to continue. Although the Italian economy has shown a growth trend over the last couple of years, political uncertainty and inflationary fears caused by continuing budget deficit problems remain major delimiters on the business environment.

The Italian software and services market is forecast to grow overall at about 7% during the remaining half of the decade, as is shown in Exhibit II-1.

Exhibit II-1

Italy — Software and Services 1993-1999
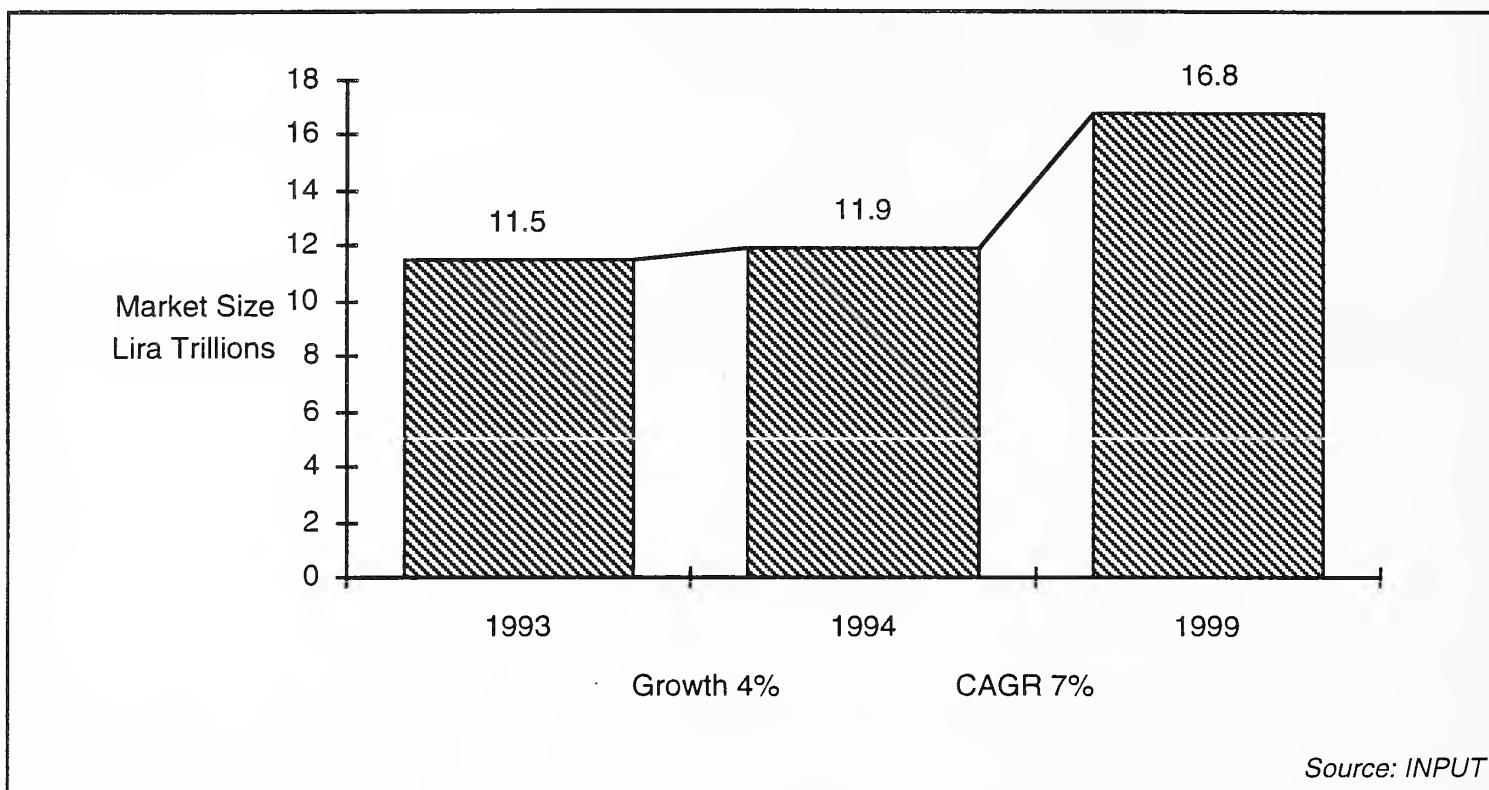
Exhibit II-2 shows a comparison of the expected growth rates of the major elements of estimated total IT budgets in Italy.

Exhibit II-2

Total IT Spending — Italy 1994-1999
Forecast Growth Rates by Budget Category

Category	Value
Software Products	8%
External IT Services	7%
Data Communications	7%
Total IT Budget	2%
Equipment Sales	0%
Facilities (In-house)	-1%
Internal Staff	-2%

% CAGR 1994-1999
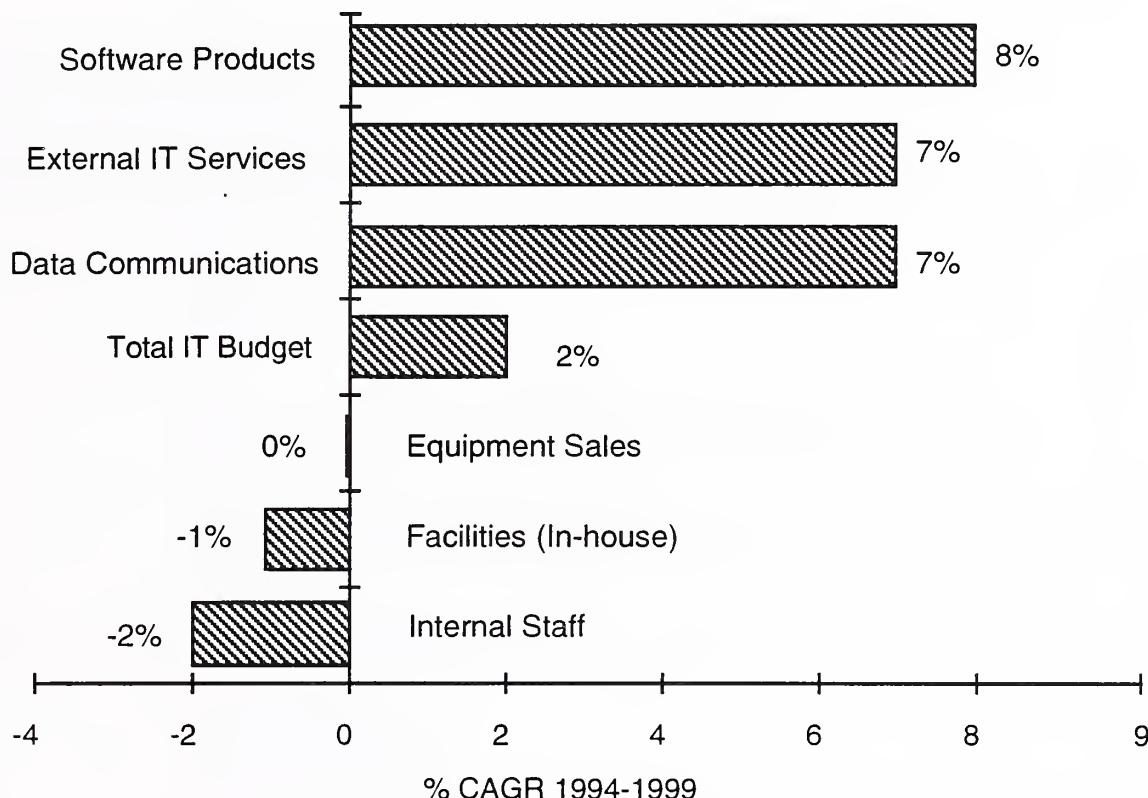
Source: INPUT

The general trend to outsource information systems functions remains of increasing importance as the main driver for software and services markets.

It implies that the market opportunity for information services vendors broadens to the entire information systems budget. This includes budgets directly controlled by the internal information systems function as well as budgets under the control of operational departments or business units.

Despite the challenging competitive IT market conditions prevailing in the 1990s, software and services markets still represent significant commercial growth opportunities, particularly when viewed within the context of the lower overall growth expectations for user's total IT expenditure (estimated at 2% per annum through to 1999).

A comparison of the leading individual country markets in the world is shown in Exhibit II-3. This exhibit demonstrates the sheer size of the United States software and services market in comparison to the Italian and other individual country markets.

Exhibit II-3

Largest Software and Services Country Markets

Country	1994 Market Size ($B)	1994-1999 CAGR (%)
United States	150	12
Japan	39	9
France	19	6
Germany	16	8
UK	13	9
Italy	7	7

Source: INPUT

B
Italian Forecast — Lira 17 Trillion Market 1999

The Italian market for software and services grew to Lire 12 trillion in 1994 and is expected to reach Lire 17 trillion by 1999.

The overall annual growth rate of 7% predicted for the entire market clearly disguises both the high and the low growth sectors, as can be seen from Exhibit II-4.

Exhibit II-4

Delivery Mode Analysis Information Services Market
— Italy, 1994-1999

CAGR (%)

Category	1994	1999	CAGR (%)
Professional Services	3.4	4.0	3
Equipment Services	3.6	3.6	0
Turnkey Systems	1.1	1.5	7
Application Software Products	2.1	3.6	11
Systems Software Products	2.4	2.9	4
Network Services	0.7	1.5	16
Processing Services	1.2	1.3	2
Systems Integration	0.5	0.9	10
Systems Operations	0.4	1.1	20

□ 1994
▨ 1999

Market Size (Lira Trillions)

Source: INPUT
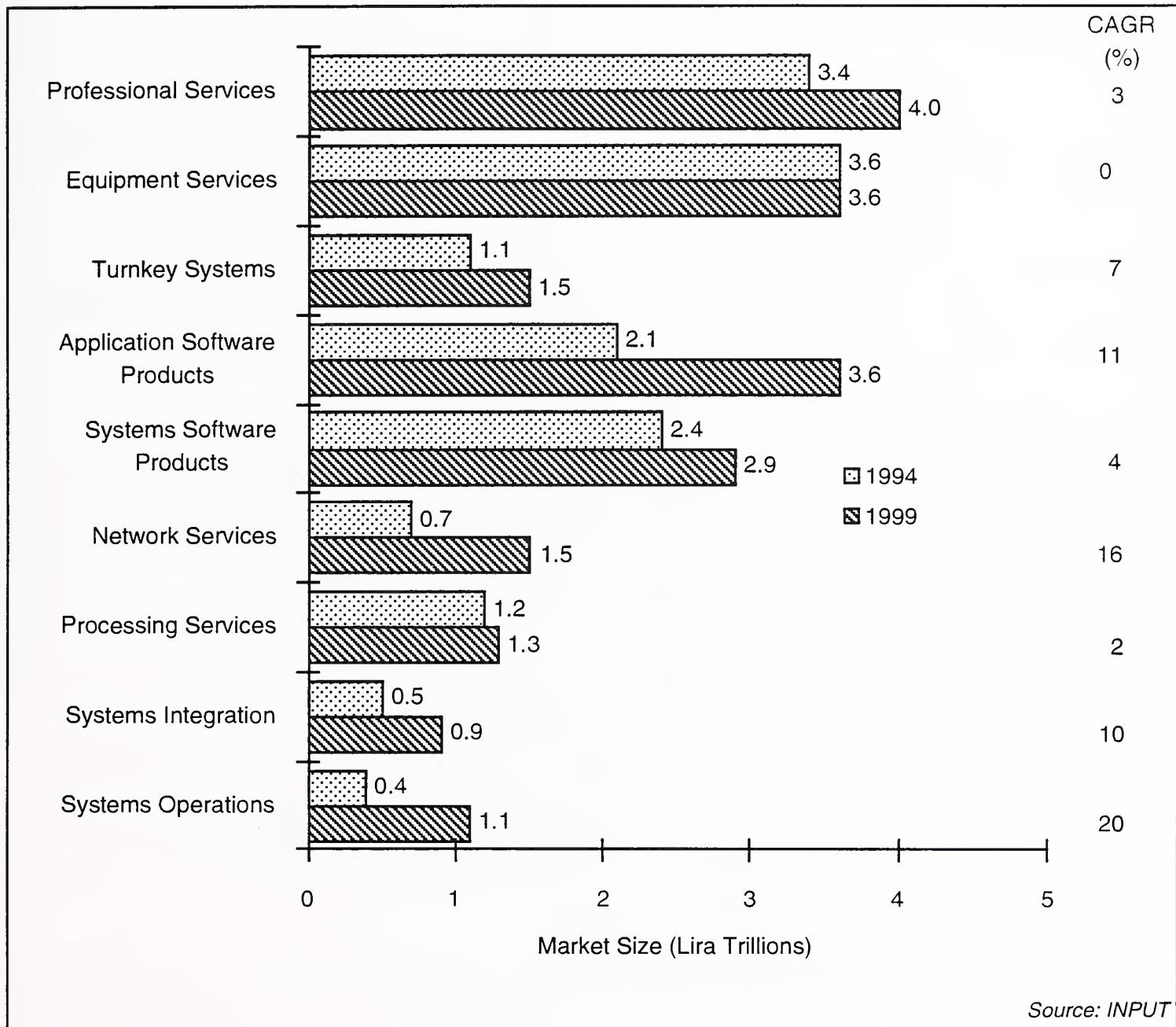
The highest growth opportunities lie in the areas of Systems Operations and Network Services.

The growing trend to outsource major portions of the information systems function drives an opportunity for information services vendors to broaden to the entire information systems budget.

That budget includes both expenditure directly controlled by the internal information systems function as well as budgets under the control of operational departments or business units.

The lowest growth sectors are those of:

- Equipment services, where ultra reliable components and open competition have driven down the market, only countered by increasing demand for network communications and desktop support where increasing complexity and critical applications demand higher levels of support

- Processing services, the classic services delivery mode remains marginalised by outsourcing contracts and severe price pressure. Nevertheless there still remain specialised sectors, for example high volume high quality laser printing, that continue to remain attractive business areas

- Professional services, strong growth in IS consulting and the outsourcing of applications management are being countered by dampened demand for custom software development as users shift inexorably to greater reliance on application products

- Systems software, where increases in volume sales are eroded by intense competition.

Other important market sectors are:

- Applications software, which will benefit from the shift away from the increasingly un-economic custom software development approach, but will have its money value growth held back by highly competitive market conditions. The success of SAP's R2/3 range of applications products is testimony to user's increasing appetite for standardised, widely available solutions

- Systems integration will grow at significantly above the overall market rate as users pay for the resolution of the complexity of solution building at the implementation phase and not within the product price

- Turnkey systems will also benefit from the user's need for resolution of system complexity within a total standardised package of hardware and software. This will remain attractive for many standardised environments such as hotels and retail outlets.

Exhibit II-5 provides an analysis of the largest vertical industry markets in Italy.

Exhibit II-5

Vertical Industry Analysis Software and Services Market — Italy, 1994-1999

CAGR (%)

Industry	1994	1999	CAGR (%)
Banking & Finance	1.4	2.2	10
Discrete Manufacturing	1.1	1.3	4
Process Manufacturing	0.7	1.1	9
Central Government	0.9	0.9	1
Local Government	0.6	0.9	8
Healthcare	0.5	0.9	12

Market Size (Lira Trillions)

Source: INPUT
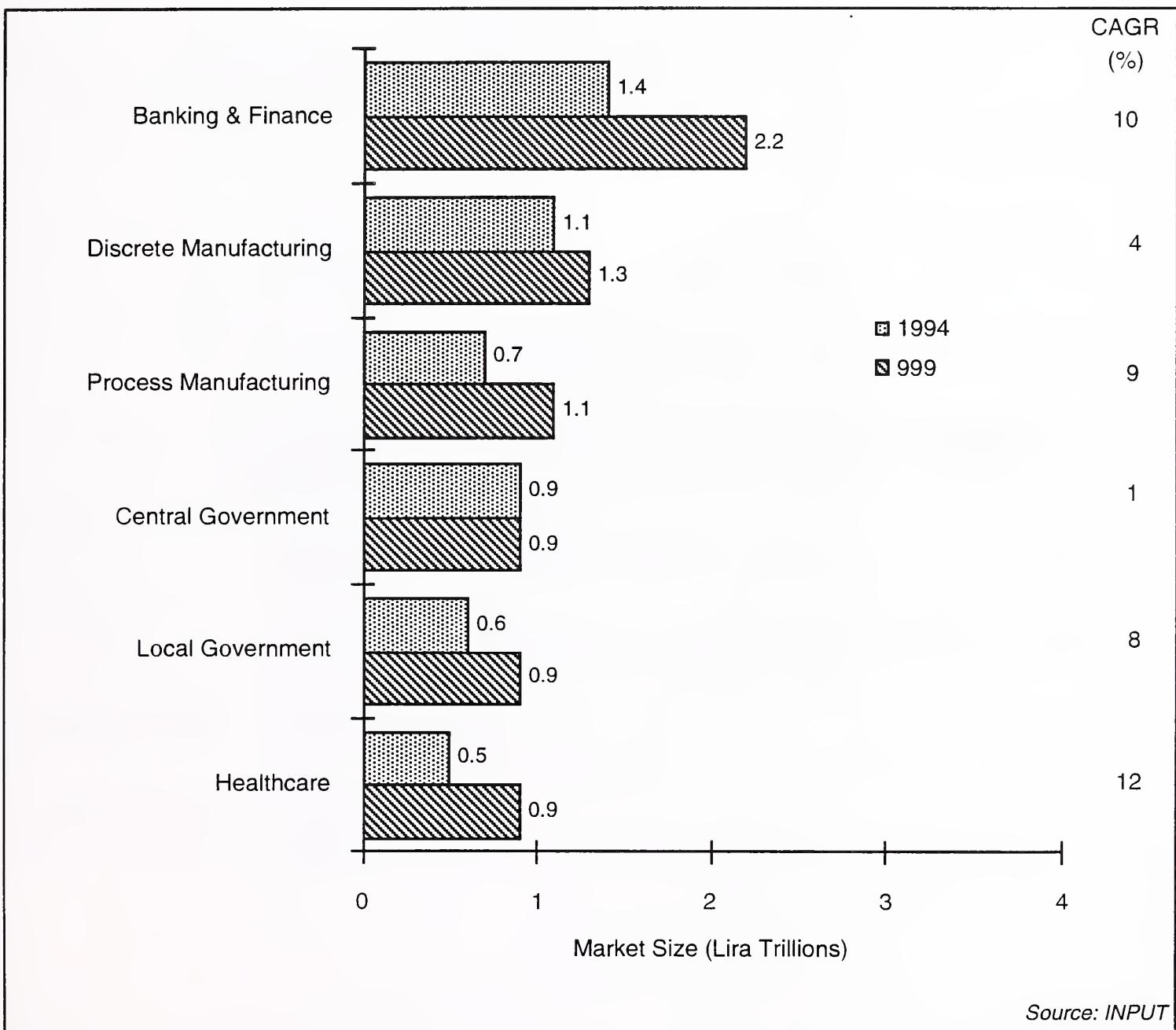
The analysis of the Italian cross industry sector market is provided in Exhibit II-6.

Exhibit II-6

Cross Industry Sector, Software and Services Market
— Italy, 1994-1999

Market Size Lire Billions)

Source: INPUT
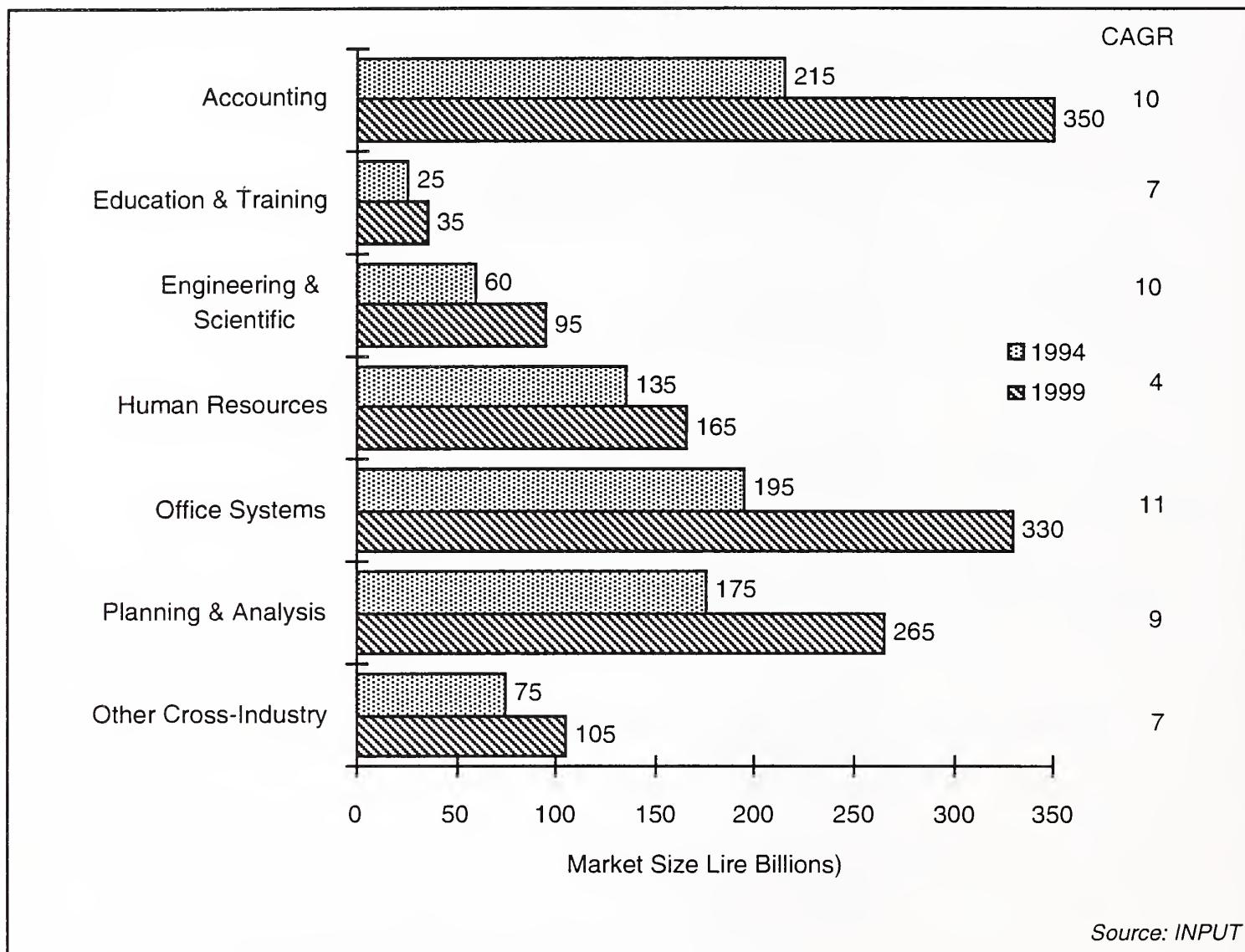
C
Vertical Industry Markets

The forecast growth of each vertical industry sector market in Italiy is provided in the following series of exhibits, Exhibits II-7 through II-21.

Exhibit II-7

Discrete Manufacturing Sector, Software and Services Market — Italy, 1994-1999

Sector	1994	1999	CAGR
Processing Services	100	52	-12
Turnkey Systems	225	230	0
Application Software Products	365	490	6
Professional Services	210	190	-2
Network Services	119	212	12
Systems Operations	59	121	15
Systems Integration	39	50	5

Market Size (Lira Millions)

Source: INPUT
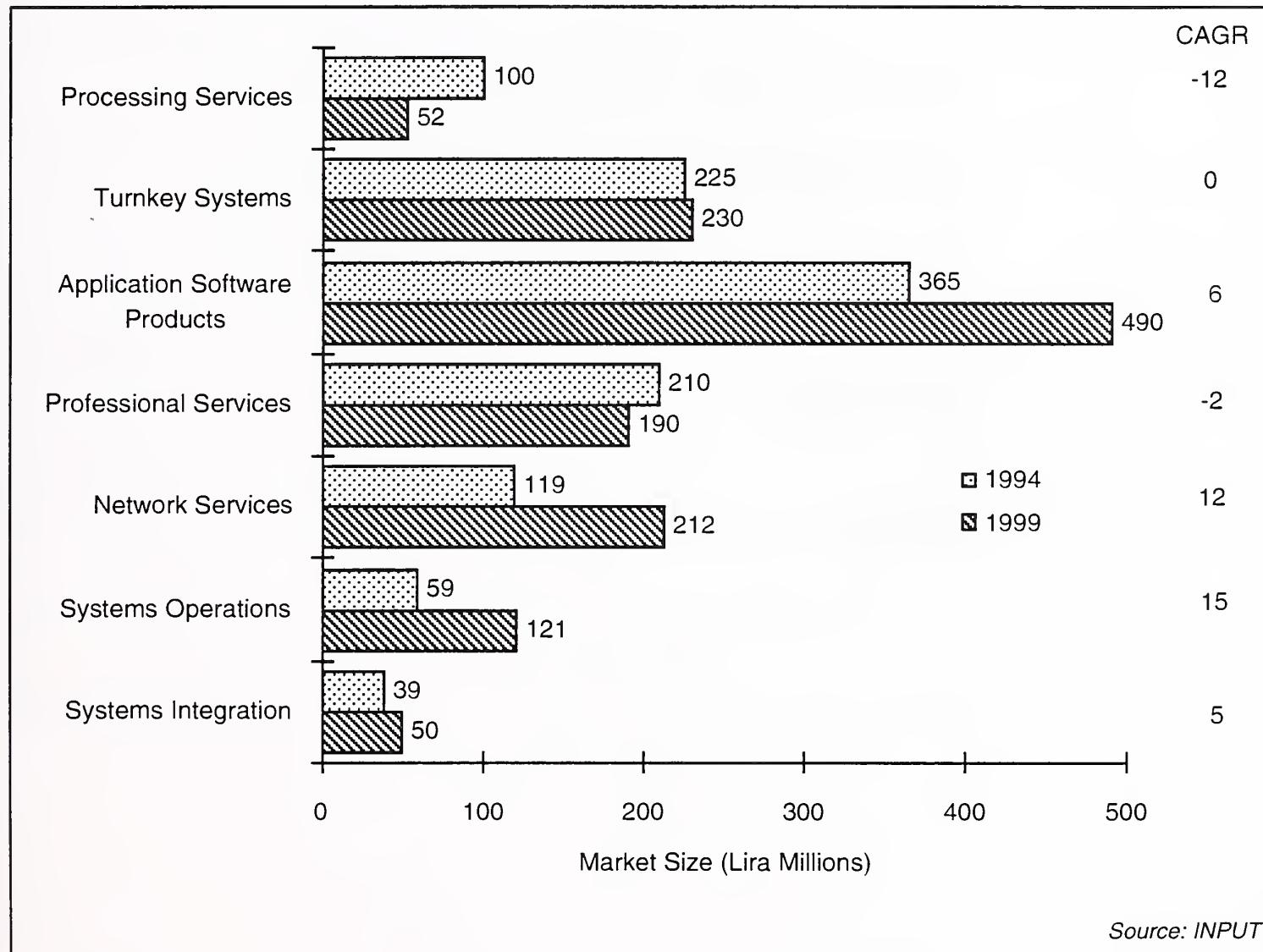
Exhibit II-8

Process Manufacturing Sectors, Software and Services Market — Italy, 1994-1999

CAGR %

Sector	CAGR %
Processing Services: 45 (1994), 45 (1999)	0
Turnkey Systems: 100 (1994), 135 (1999)	6
Application Software Products: 175 (1994), 320 (1999)	13
Professional Services: 225 (1994), 265 (1999)	3
Network Services: 64 (1994), 153 (1999)	19
Systems Operations: 37 (1994), 96 (1999)	21
Systems Integration: 48 (1994), 68 (1999)	7

□ 1994
▨ 1999

Market Size (Lira Millions)

Source: INPUT
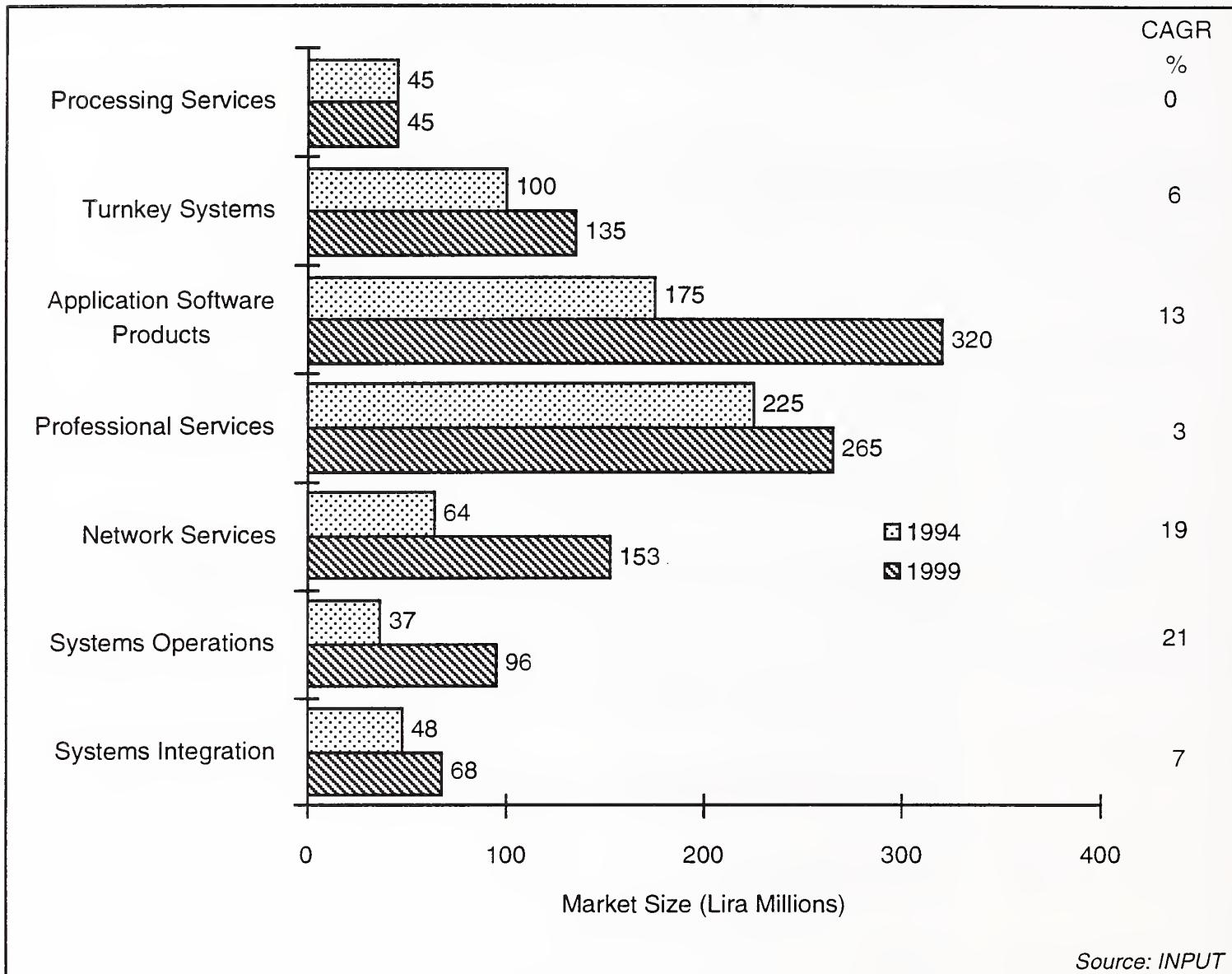
Exhibit II-9

Transportation Sectors, Software and Services Market — Italy, 1994-1999

Market Size (Lira Millions)

Source: INPUT
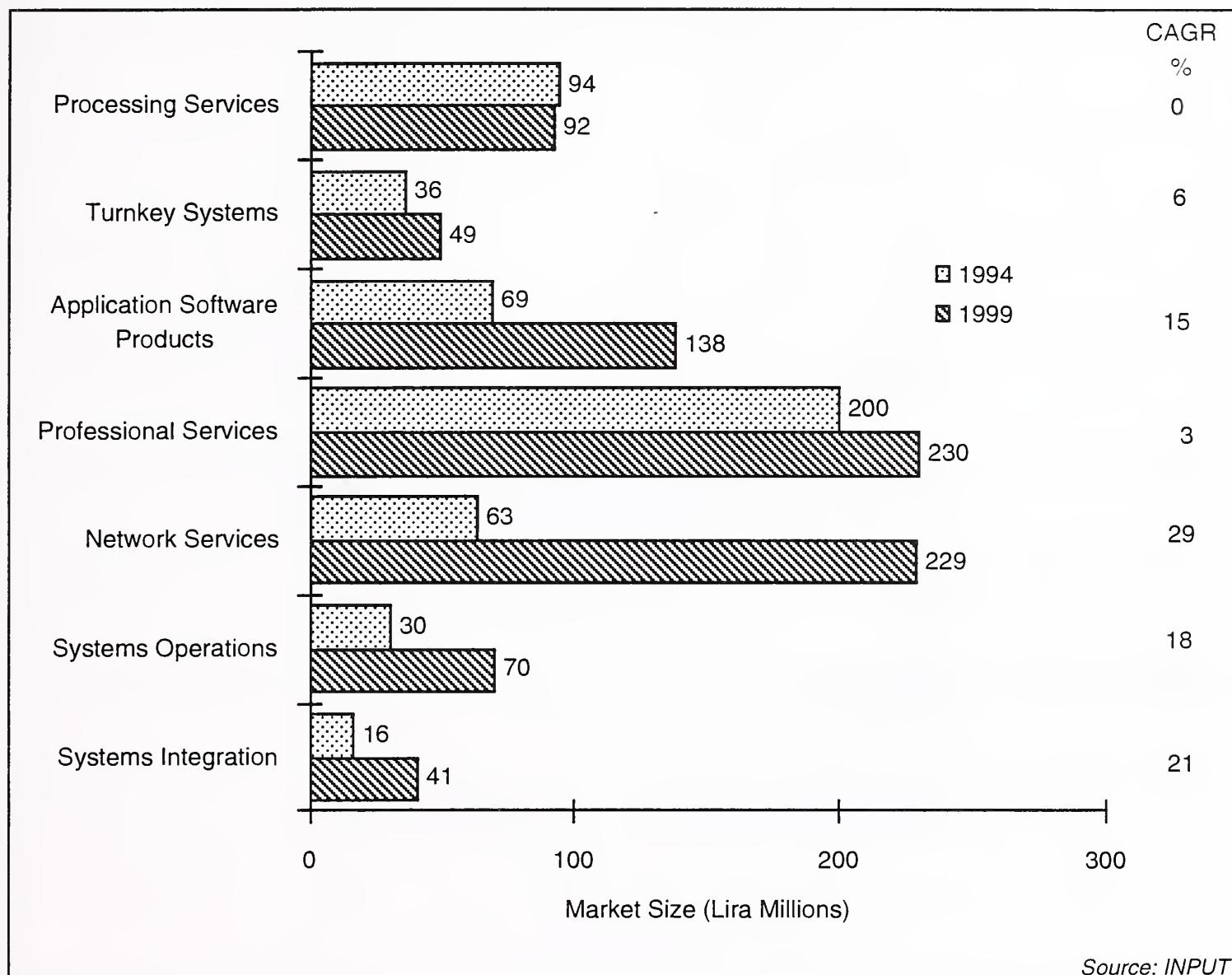
Exhibit II-10

Utilities Sectors, Software and Services Market — Italy, 1994-1999

CAGR
%

Sector	1994	1999	CAGR %
Processing Services	30	50	11
Turnkey Systems	15	21	7
Application Software Products	26	54	16
Professional Services	200	335	11
Network Services	9	19	16
Systems Operations	22	65	24
Systems Integration	58	133	18

☐ 1994
☒ 1999

Market Size (Lira Millions)

Source: INPUT
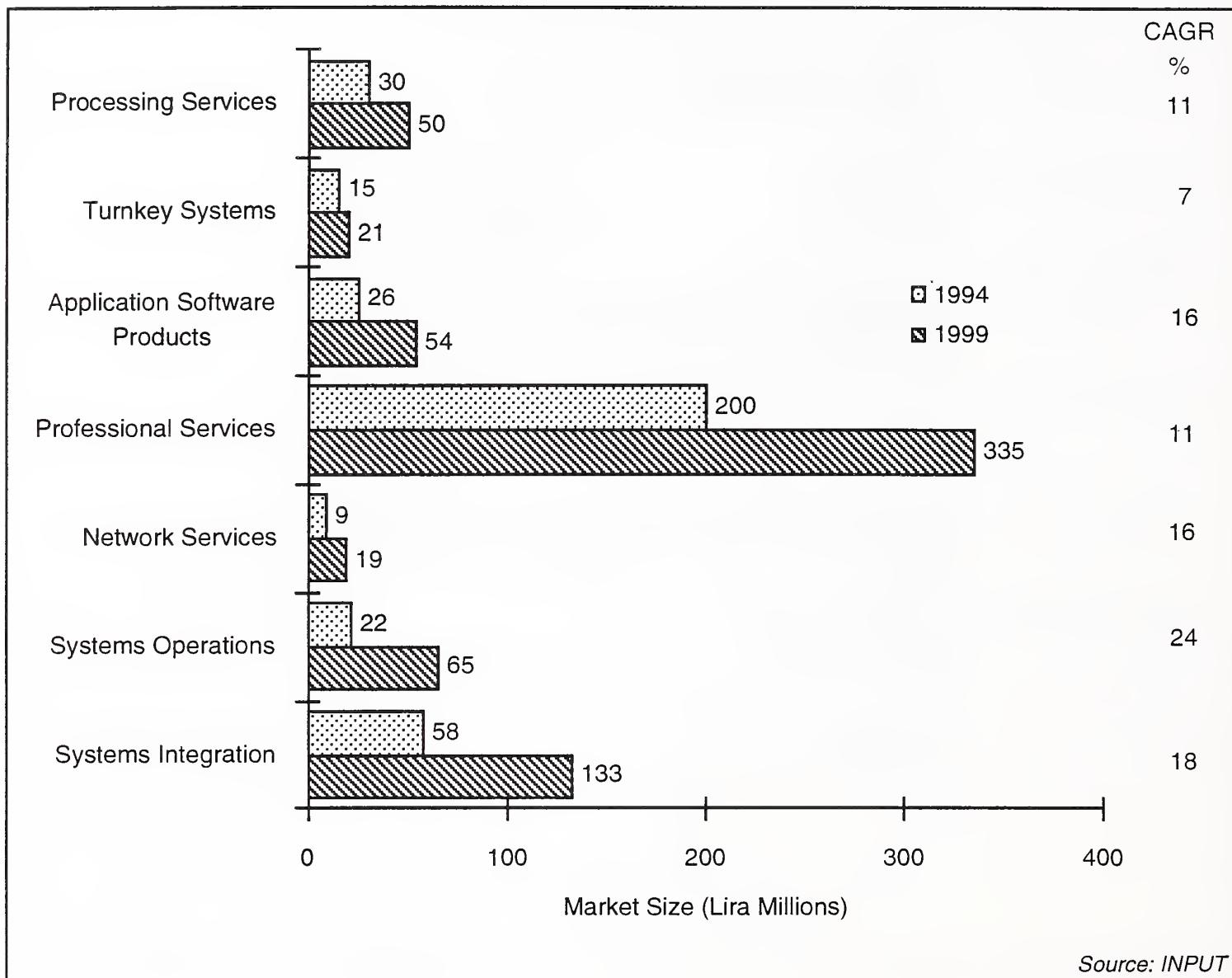
Exhibit II-11

Telecommunications Sectors, Software and Services Market — Italy, 1994-1999

CAGR
%

Processing Services — 31 / 50 — 10

Turnkey Systems — 17 / 24 — 7

Application Software Products — 28 / 58 — 16

□ 1994
▨ 1999

Professional Services — 127 / 221 — 12

Network Services — 9 / 35 — 31

Systems Operations — 15 / 49 — 27

Systems Integration — 35 / 80 — 18

0   100   200   300

Market Size (Lira Millions)

Source: INPUT
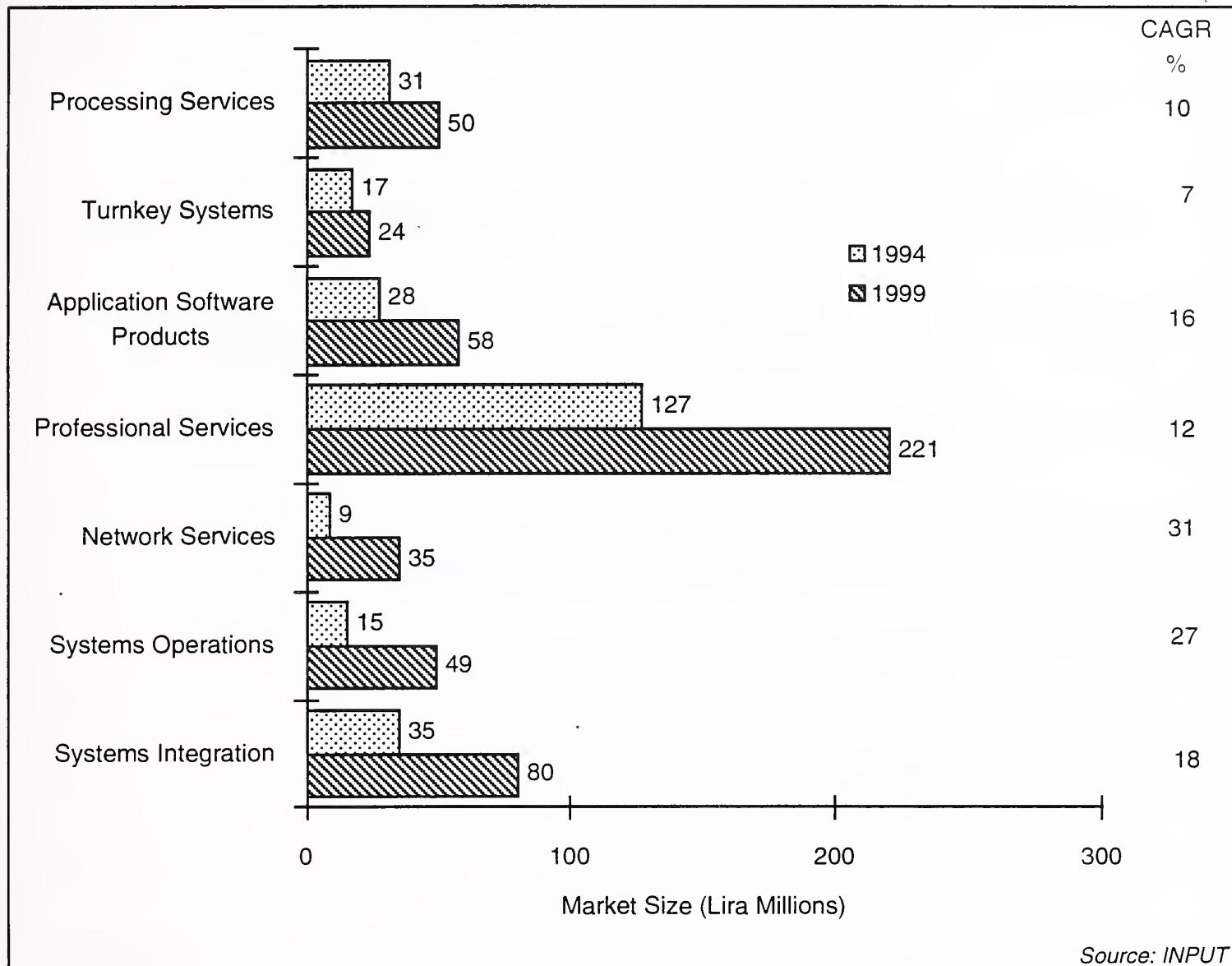
Exhibit II-12

Retail Distribution Sectors,
Software and Services Market — Italy, 1994-1999

Bar chart legend: ▣ 1994, ▨ 1999

Sector	1994	1999	CAGR %
Processing Services	19	20	1
Turnkey Systems	32	44	7
Application Software Products	55	102	13
Professional Services	82	88	1
Network Services	36	87	19
Systems Operations	7	17	19
Systems Integration	7	16	18

Market Size (Lira Millions)

Source: INPUT
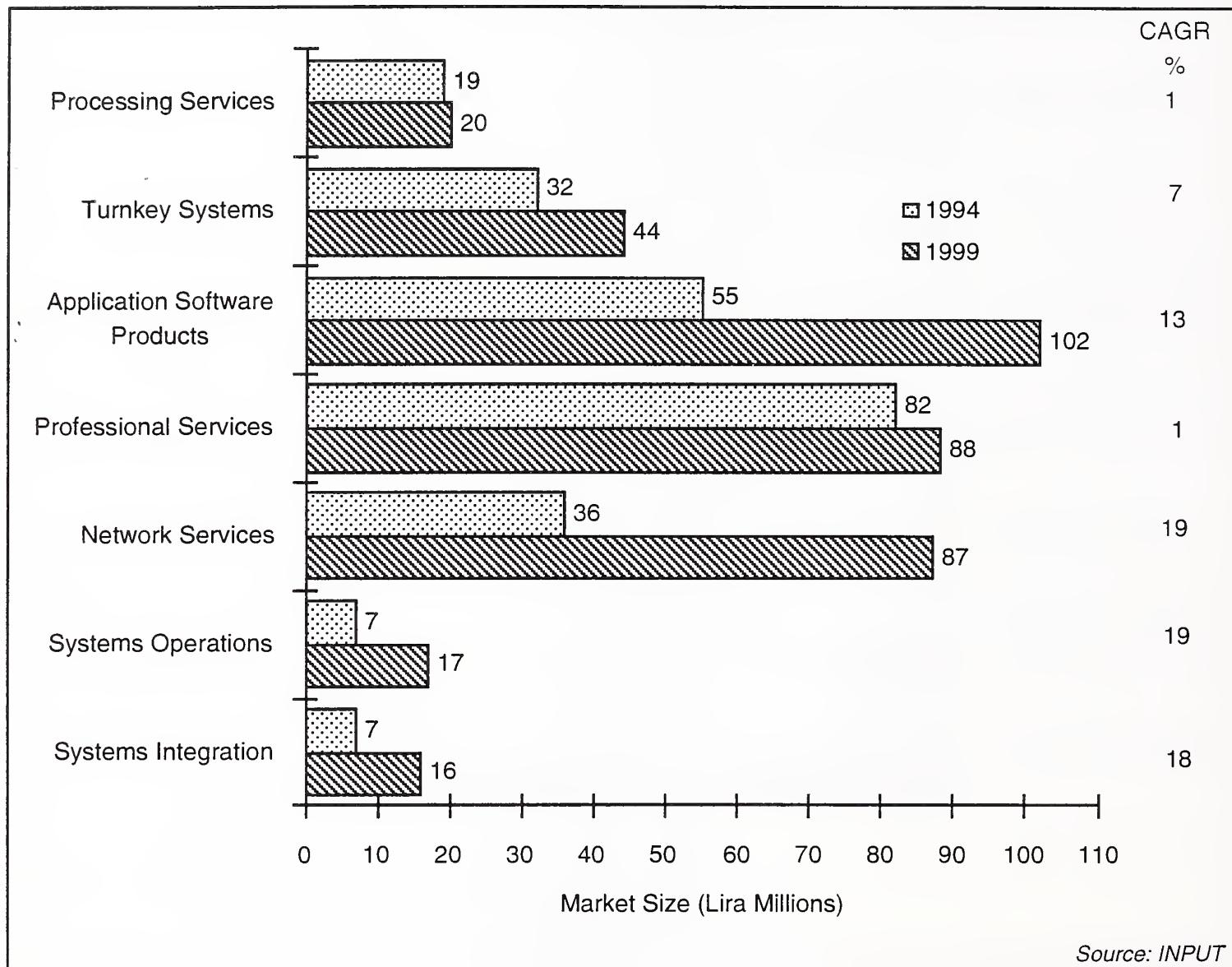
Exhibit II-13

Wholesale Distribution Sectors, Software and Services Market — Italy, 1994-1999

CAGR
%

Sector	1994	1999	CAGR %
Processing Services	17	13	-5
Turnkey Systems	40	45	2
Application Software Products	69	102	8
Professional Services	123	126	0
Network Services	39	76	14
Systems Operations	8	23	24
Systems Integration	7	12	11

☐ 1994
☒ 1999

Market Size (Lira Millions)

Source: INPUT

Exhibit II-14

Banking & Finance Sectors, Software and Servcies Market — Italy, 1994-1999

CAGR
%

Category	1994	1999	CAGR %
Processing Services	235	280	4
Turnkey Systems	195	310	10
Application Software Products	185	390	16
Professional Services	565	755	6
Network Services	116	309	22
Systems Operations	25	86	28
Systems Integration	80	95	3

☐ 1994
▨ 1999

Market Size (Lira Millions)

Source: INPUT

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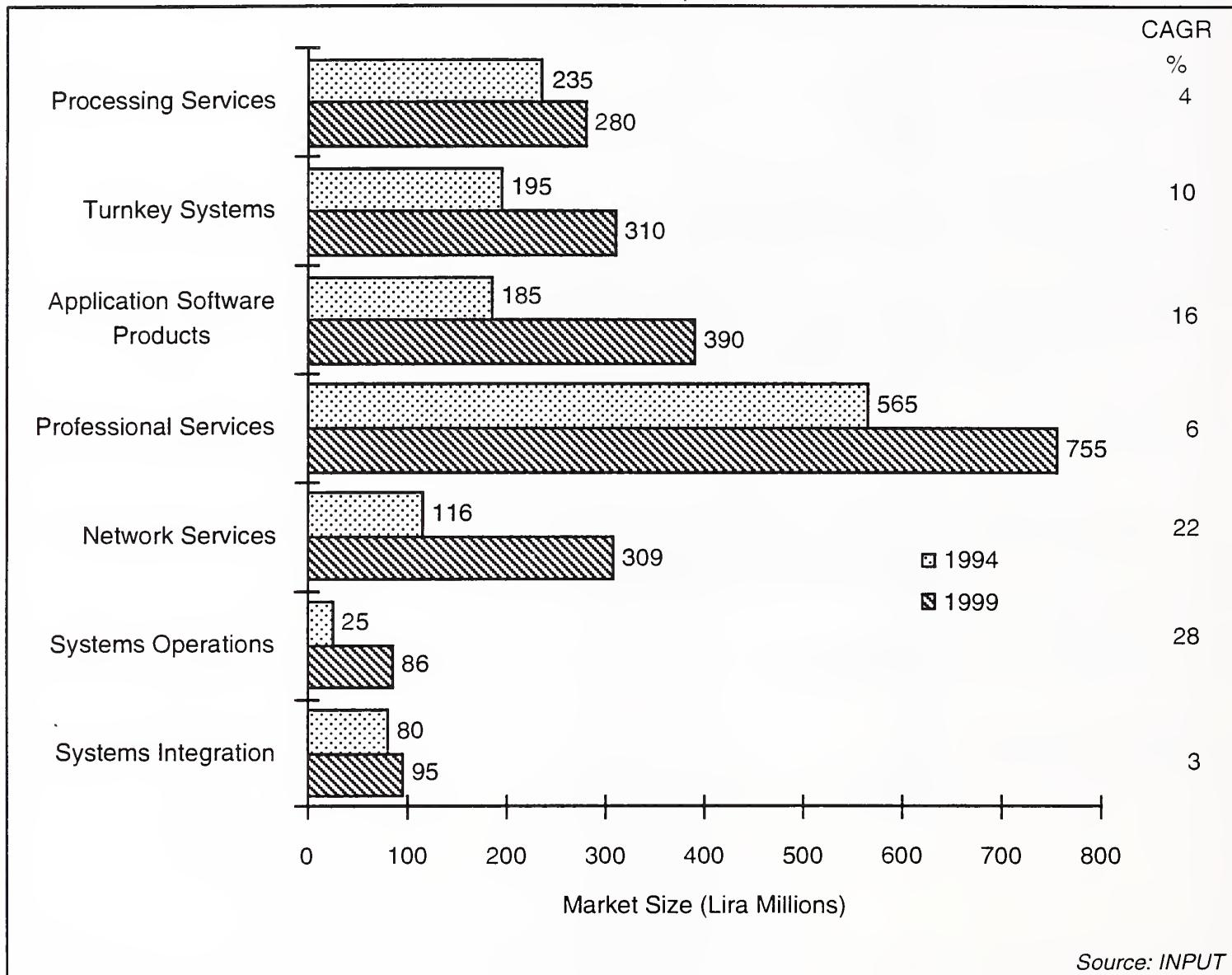
Exhibit II-15

Insurance Sectors,
Software and Services Market — Italy, 1994-1999

CAGR
%

Sector	1994	1999	CAGR %
Processing Services	63	80	5
Turnkey Systems	88	141	10
Application Software Products	90	197	17
Professional Services	195	280	8
Network Services	29	83	23
Systems Operations	8	25	26
Systems Integration	31	39	5

▣ 1994
▨ 1999

Market axis: 0, 50, 100, 150, 200, 250, 300

Market Size (Lira Millions)

Source: INPUT

Exhibit II-16

Healthcare Sectors,
Software and Services Market — Italy 1994-1999

Market Size (Lira Millions)

CAGR %

Sector	1994	1999	CAGR %
Processing Services	72	88	4
Turnkey Systems	54	111	16
Application Software Products	97	197	15
Professional Services	205	275	6
Network Services	8	24	25
Systems Operations	65	195	25
Systems Integration	21	38	13

□ 1994
▨ 1999

Source: INPUT
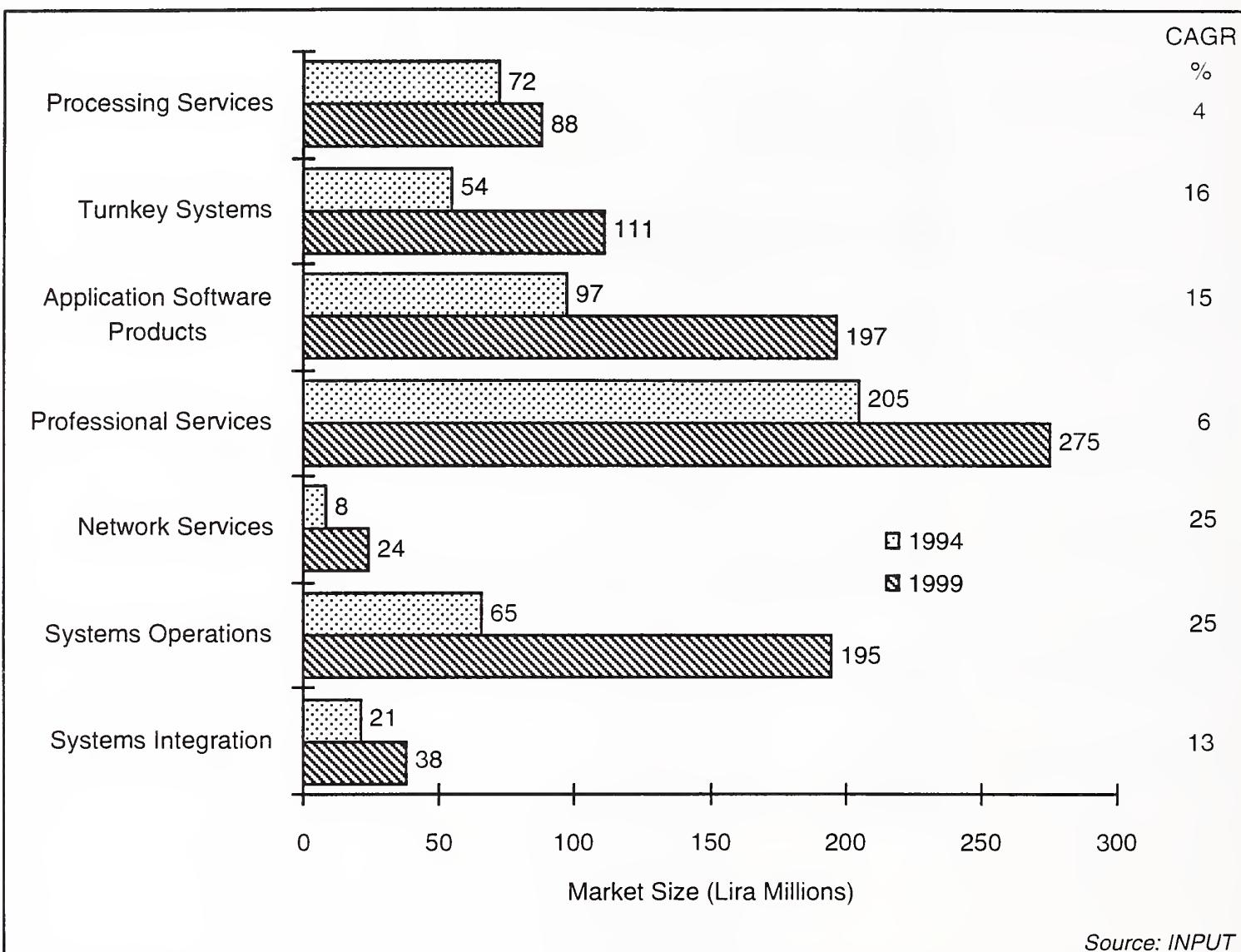
Exhibit II-17

Education Sectors,
Software and Services Market — Italy, 1994-1999

Processing Services — 7 (1994), 7 (1999), CAGR % 0

Turnkey Systems — 13 (1994), 8 (1999), CAGR -9

Application Software Products — 19 (1994), 14 (1999), CAGR -6

Professional Services — 69 (1994), 69 (1999), CAGR 0

Network Services — 3 (1994), 3 (1999), CAGR 0

Systems Operations — 1 (1994), 1 (1999), CAGR 0

Systems Integration — 3 (1994), 1 (1999), CAGR -20

Legend: □ 1994 ◪ 1999

Market Size (Lira Millions)

Source: INPUT

Exhibit II-18

Local Government Sectors,
Software and Services Market — Italy, 1994-1999

CAGR
%

Sector	1994	1999	CAGR %
Processing Services	68	76	2
Turnkey Systems	34	53	9
Application Software Products	63	127	15
Professional Services	325	385	3
Network Services	5	5	0
Systems Operations	58	142	20
Systems Integration	58	105	13

☑ 1994
◩ 1999

Market Size (Lira Millions)

Source: INPUT
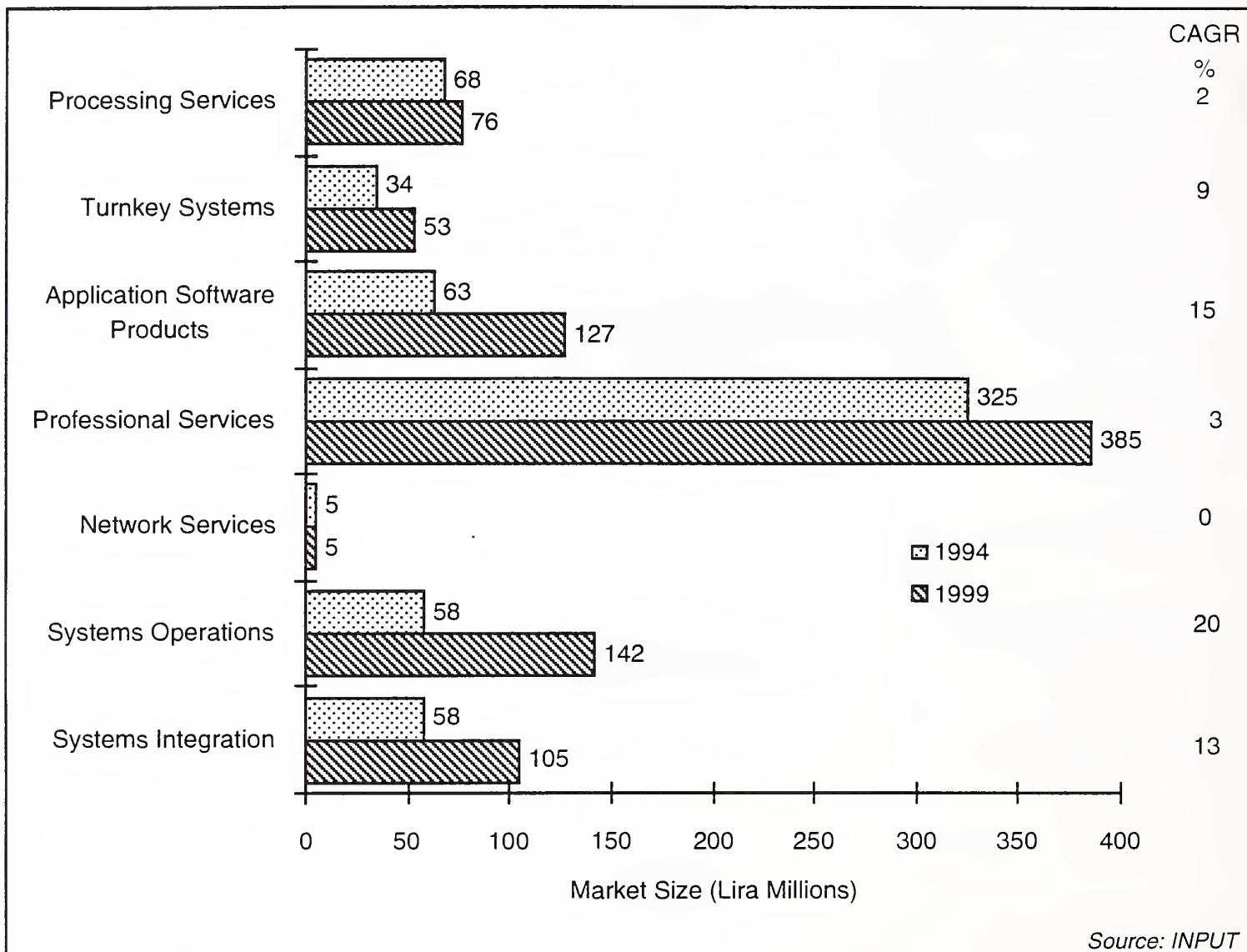
Exhibit II-19

Central Government Sectors, Software and Services Market — Italy, 1994-1999

Processing Services — 89 (1994), 77 (1999), CAGR % -3

Turnkey Systems — 32 (1994), 43 (1999), CAGR % 6

Application Software Products — 51 (1994), 58 (1999), CAGR % 3

Professional Services — 495 (1994), 370 (1999), CAGR % -6

Network Services — 19 (1994), 38 (1999), CAGR % 15

Systems Operations — 70 (1994), 150 (1999), CAGR % 16

Systems Integration — 120 (1994), 185 (1999), CAGR % 9

Legend: □ 1994   ▨ 1999

Market Size (Lira Millions)

Source: INPUT
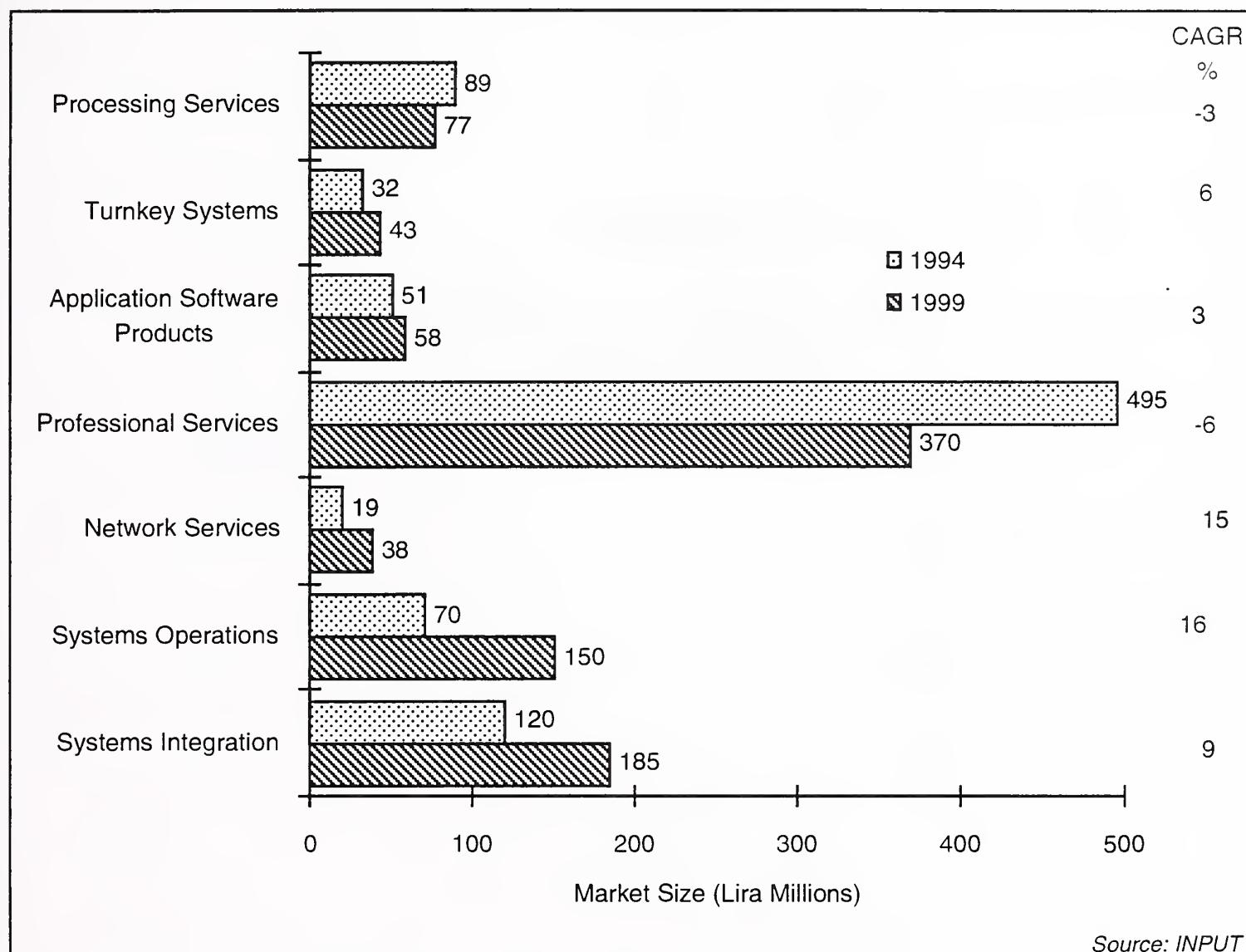
Exhibit II-20

Business Services Sectors, Software and Services Market — Italy, 1994-1999

	CAGR %
Processing Services — 1994: 38, 1999: 43	3
Turnkey Systems — 1994: 55, 1999: 134	19
Application Software Products — 1994: 85, 1999: 145	11
Professional Services — 1994: 225, 1999: 275	4
Network Services — 1994: 7, 1999: 15	16
Systems Operations — 1994: 13, 1999: 22	11
Systems Integration — 1994: 7, 1999: 12	11

Legend: ▣ 1994   ▨ 1999

Market Size (Lira Millions)

Source: INPUT
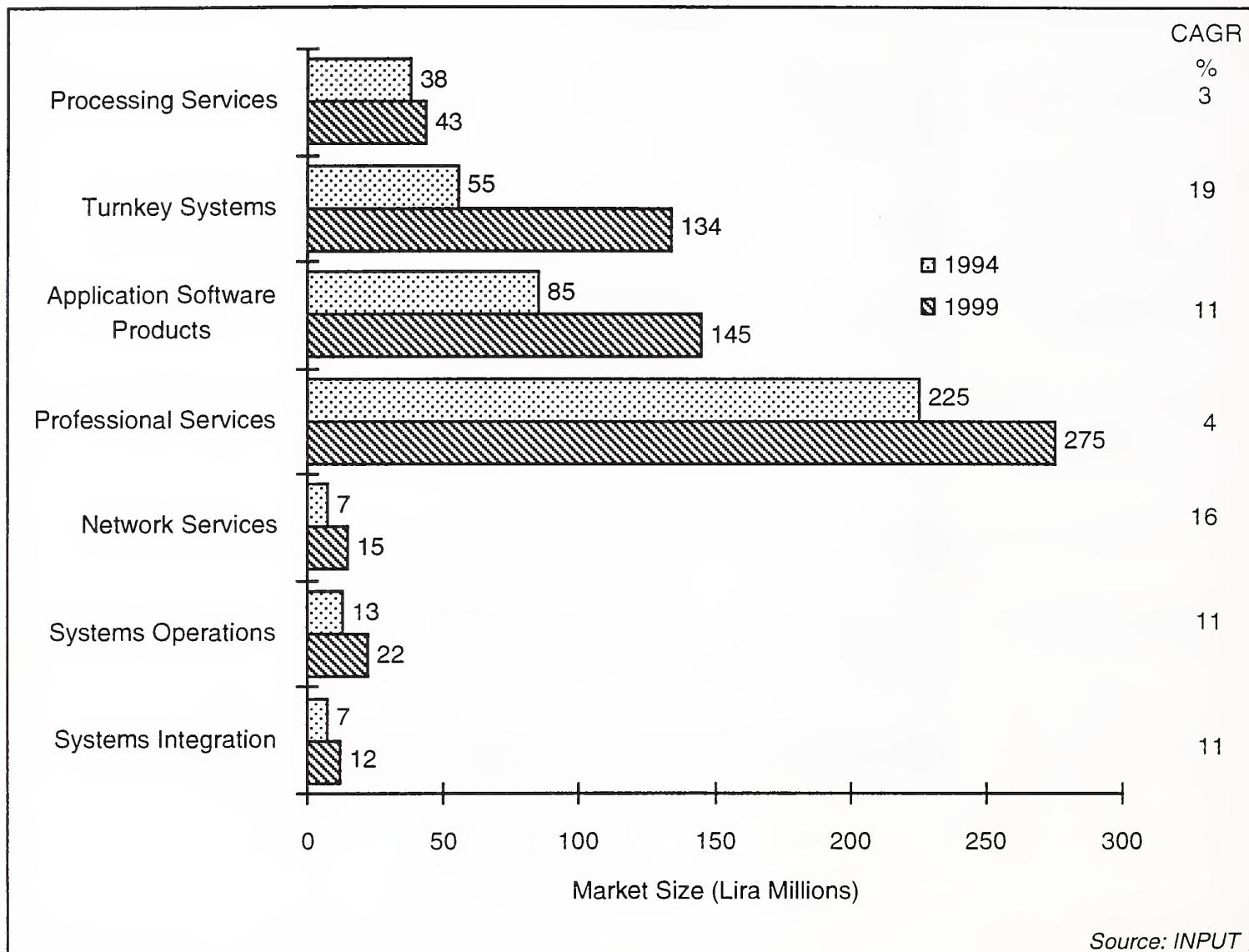
Exhibit II-21

Other Industry Sectors, Software and Services Market — Italy, 1994-1999

Market Size (Lira Millions)

Sector	1994	1999	CAGR %
Processing Services	21	16	-5
Turnkey Systems	22	17	-5
Application Software Products	49	63	5
Professional Services	185	165	-2
Network Services	2	2	0
Systems Operations	10	14	7
Systems Integration	5	5	0

Source: INPUT

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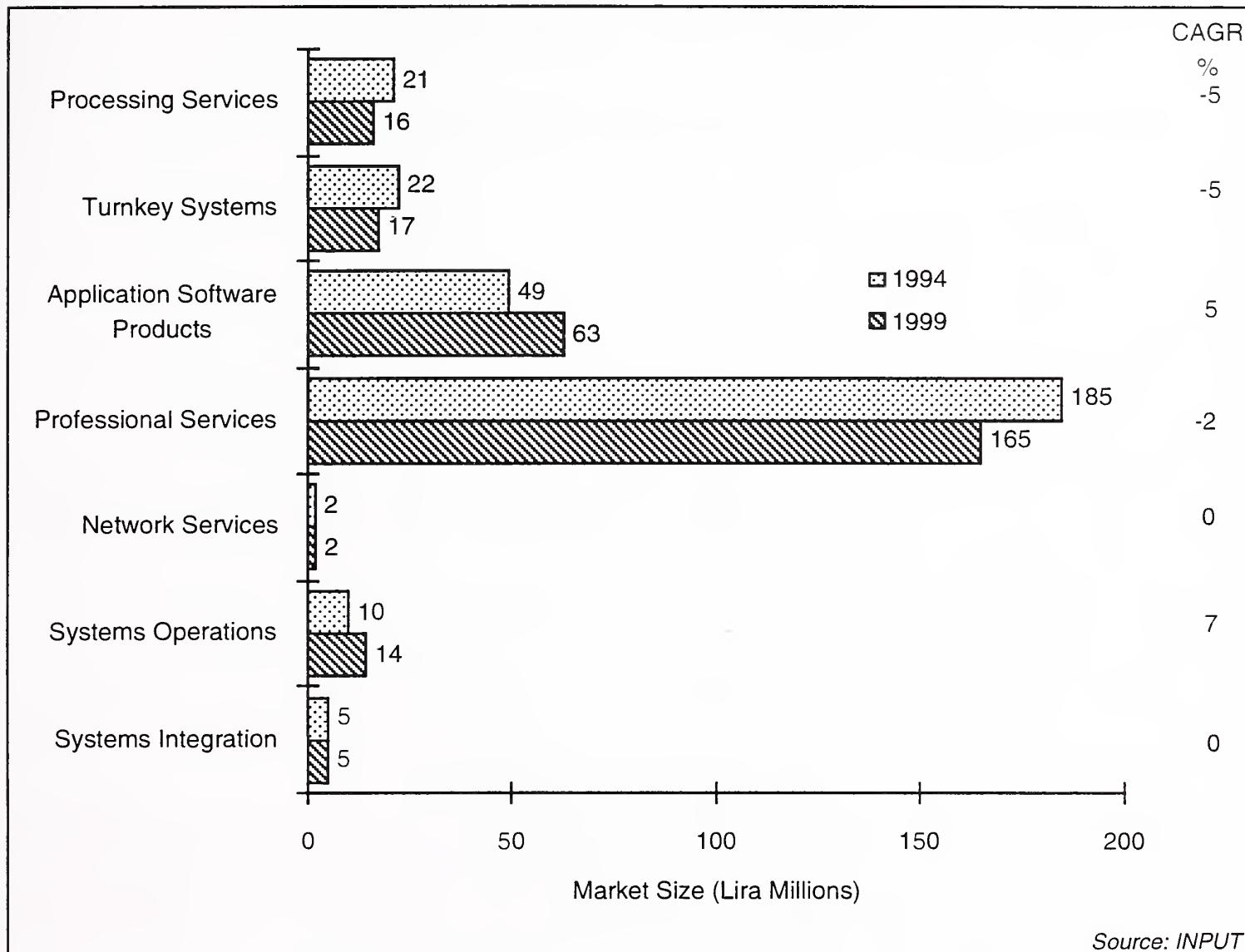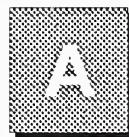
Information Services Industry Forecast Database, 1994-1999 Italy

A

Forecast Database in Local Currency (Lira Billions)

Exhibit A-1

Top Level IT Expenditure, Italy

Sector	Lira Billions								
	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Equipment Sales	8,150	-1	8,050	8,050	8,100	8,150	8,150	8,150	0
Equipment Services	3,500	2	3,560	3,580	3,590	3,610	3,600	3,590	0
Software Products	4,170	6	4,420	4,750	5,130	5,560	6,010	6,520	8
Other Information Services	6,620	2	6,780	6,990	7,510	8,030	8,660	9,380	7
Data Communications	2,920	9	3,170	3,410	3,660	3,930	4,180	4,480	7
Facilities/ Administration	4,510	-4	4,350	4,230	4,190	4,200	4,190	4,190	-1
In-house Staff	12,900	-3	12,500	12,300	12,200	11,700	11,500	11,400	-2
IT Budget Total	38,500	1	39,000	39,500	40,500	41,000	42,000	43,500	2

Exhibit A-2

Information Services Market
Forecast by Delivery Mode and Submode
Italy, 1994-1999

Delivery Modes	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR(%)
Software and Services Total (ex. Equipment Services)	11,450	4	11,900	12,500	13,350	14,400	15,500	16,750	7
Professional Services	3,460	-1	3,430	3,420	3,550	3,660	3,840	4,030	3
- IS Consulting	500	10	550	575	620	695	795	900	10
- Education & Training	250	6	265	265	270	290	315	340	5
- Custom Software	2,690	-4	2,580	2,540	2,620	2,620	2,660	2,700	1
- Application Management	25	24	31	36	43	54	69	87	23
Systems Integration	490	9	535	585	650	725	800	880	10
- Equipment	140	0	140	150	160	170	185	200	7
- Application Software	95	0	95	115	140	170	210	260	22
- System Software	40	0	40	45	50	55	60	65	10
- Professional Services	205	22	250	265	285	315	330	335	6
- Other	10	0	10	11	13	15	17	20	15
Systems Operations	350	23	430	505	605	735	890	1,075	20
- Platform Operations	100	15	115	120	125	145	160	200	12
- Application Operations	200	25	250	300	370	450	550	650	21
- Desktop Services	50	30	65	85	110	140	180	225	28
Processing Services	1,185	-2	1,165	1,160	1,185	1,215	1,235	1,260	2
- Transaction Processing	1,060	-2	1,035	1,025	1,045	1,065	1,075	1,090	1
- Utility Processing	15	0	15	15	15	15	15	15	0
- Other Processing	110	5	115	120	125	135	145	155	6
Network Services	650	14	740	850	980	1,140	1,320	1,530	16
- Electronic Info Svcs	400	5	420	440	460	480	480	480	3
- Network Applications	200	30	260	340	440	565	730	925	29
- Network Management	50	20	60	70	80	95	110	125	16
System Software Product	2,300	4	2,400	2,500	2,600	2,700	2,800	2,900	4
- Mainframe	905	-4	865	810	770	730	695	640	-6
- Minicomputer	755	5	795	840	870	890	905	920	3
- Workstation /PC	640	16	740	850	960	1,080	1,200	1,340	13
Application Software Product	1,940	10	2,100	2,320	2,580	2,890	3,200	3,560	11
- Mainframe	155	-6	146	136	127	120	114	109	-6
- Minicomputer	535	-8	494	504	513	510	436	341	-7
- Workstation /PC	1,250	17	1,460	1,680	1,940	2,260	2,650	3,110	16
Turnkey Systems	1,050	3	1,080	1,140	1,220	1,320	1,410	1,510	7
- Equipment	525	3	540	560	585	610	630	650	4
- Application Software	255	0	255	275	305	340	375	410	10
- System Software	12	8	13	14	15	16	17	18	7
- Professional Services	265	2	270	290	320	355	390	430	10
Equipment Services	3,500	2	3,560	3,580	3,590	3,610	3,600	3,590	0
- Equipment Maintenance	2,350	0	2,355	2,320	2,265	2,200	2,095	1,990	-3
- Environmental Services	1,150	5	1,205	1,260	1,325	1,410	1,505	1,600	6
Grand Total Information Service Market	15,000	3	15,500	16,000	17,000	18,000	19,000	20,500	6

Lira Billions

B

Sector Summary in Local Currency

Exhibit A-3

Information Services Market by Sector Summary, Italy

Sector	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
			Lira Billions						
Processing Services	940	-1	930	925	945	965	975	990	1
Turnkey Systems	935	3	960	1,020	1,095	1,185	1,270	1,365	7
Application Software Products	1,300	10	1,430	1,590	1,790	1,990	2,210	2,460	11
Professional Services	3,460	-1	3,430	3,420	3,550	3,660	3,840	4,030	3
Network Services	450	18	530	625	750	900	1,075	1,290	19
Systems Operations	350	23	430	505	605	735	890	1,075	20
Systems Integration	490	9	535	585	650	725	800	880	10
Industry Sectors Total	7,950	4	8,250	8,650	9,400	10,150	11,050	12,100	8
Transaction Processing	120	-13	105	100	100	100	100	100	-1
Turnkey Systems	115	0	115	115	120	130	140	145	5
Application Software Products	640	4	665	725	790	895	990	1,095	10
Cross-Industry Sectors Total	875	1	885	940	1,010	1,125	1,230	1,340	9
Equipment Services	3,500	2	3,560	3,580	3,590	3,610	3,600	3,590	0
System Software Products	2,300	4	2,400	2,500	2,600	2,700	2,800	2,900	4
Utility and Other Processing	125	4	130	135	140	150	160	170	6
Other Electronic Info Services	200	5	210	220	230	240	240	240	3
Generic Sectors Total	6,125	3	6,300	6,435	6,560	6,700	6,800	6,900	2
Total Information Services	15,000	3	15,400	16,000	17,000	18,000	19,100	20,300	6

C

Industry Sectors in Local Currency

Exhibit A-4

Information Services Market by Industry Sectors, Italy

Sector	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Discrete Manufacturing	1,195	-7	1,115	1,110	1,115	1,180	1,255	1,345	4
Process Manufacturing	650	7	695	710	770	855	960	1,080	9
Transportation	455	12	510	545	600	665	750	850	11
Utilities	330	9	360	400	470	535	605	675	13
Telecommunications	235	11	260	295	340	395	450	515	15
Retail Distribution	225	7	240	260	290	315	345	375	9
Wholesale Distribution	295	3	305	315	330	350	370	395	5
Banking & Finance	1,275	10	1,400	1,540	1,725	1,890	2,045	2,225	10
Insurance	470	7	505	555	625	695	765	845	11
Healthcare	465	12	520	585	675	745	830	930	12
Education	120	-4	115	110	105	105	105	105	-2
Local Government	585	4	610	640	690	745	815	895	8
Central Government	900	-3	875	855	855	870	890	920	1
Business Services	410	5	430	455	495	540	590	645	8
Other Industries	320	-8	295	285	280	280	280	280	-1
Industry Sectors Total	7,950	4	8,250	8,650	9,400	10,150	11,050	12,100	8

Header note: Lira Billions

Exhibit A-5

Industry Sectors, Discrete Manufacturing, Italy

Sector	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
				Lira Billions					
Equipment Sales	1,220	-15	1,040	940	850	810	770	730	-7
Equipment Services	640	-11	570	520	470	450	430	410	-6
Software Products	770	-4	740	740	730	760	790	830	2
Other Information Services	770	-10	690	670	660	690	740	780	2
Data Communications	280	0	280	290	295	315	340	365	5
Facilities/ Administration	570	-18	470	410	360	340	320	310	-8
In-house Staff	2,150	-16	1,800	1,600	1,450	1,350	1,250	1,200	-8
IT Budget Total	6,400	-13	5,590	5,170	4,815	4,715	4,640	4,625	-4
Processing Services	127	-21	100	83	71	64	58	52	-12
Turnkey Systems	250	-10	225	220	215	220	225	230	0
Application Software Products	365	0	365	380	395	425	455	490	6
Professional Services	245	-14	210	190	180	180	185	190	-2
Network Services	114	4	119	130	142	162	185	212	12
Systems Operations	53	11	59	65	73	86	102	121	15
Systems Integration	40	-3	39	40	41	44	47	50	5
Industry Sectors Total	1,195	-7	1,115	1,110	1,115	1,180	1,255	1,345	4

Exhibit A-6

Industry Sectors, Process Manufacturing, Italy

Sector	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Equipment Sales	745	1	750	715	705	720	735	755	0
Equipment Services	310	3	320	305	300	305	310	315	0
Software Products	355	8	385	400	430	470	520	575	8
Other Information Services	465	6	495	490	525	580	645	720	8
Data Communications	295	7	315	315	325	345	365	390	4
Facilities/ Administration	405	-2	395	365	350	360	370	380	-1
In-house Staff	1,190	-1	1,180	1,110	1,080	1,060	1,070	1,080	-2
IT Budget Total	3,800	1	3,840	3,700	3,715	3,840	4,015	4,215	2
Processing Services	45	0	45	42	42	43	44	45	0
Turnkey Systems	95	5	100	100	105	115	125	135	6
Application Software Products	155	13	175	190	215	245	280	320	13
Professional Services	225	0	225	215	220	230	245	265	3
Network Services	54	19	64	73	86	104	126	153	19
Systems Operations	30	23	37	42	50	62	77	96	21
Systems Integration	45	7	48	49	52	57	62	68	7
Industry Sectors Total	650	7	695	710	770	855	960	1,080	9

Exhibit A-7

Industry Sectors, Transportation, Italy

Sector	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Equipment Sales	190	-3	185	170	155	140	130	120	-8
Equipment Services	83	8	90	92	93	94	95	96	1
Software Products	110	18	130	145	165	180	200	225	12
Other Information Services	385	10	425	450	485	540	605	685	10
Data Communications	79	39	110	146	192	252	331	435	32
Facilities/ Administration	135	4	140	135	135	135	135	135	-1
In-house Staff	295	-2	290	270	250	225	210	195	-8
IT Budget Total	1,200	14	1,370	1,408	1,475	1,566	1,706	1,891	7
Processing Services	91	3	94	92	92	92	92	92	0
Turnkey Systems	33	9	36	38	40	43	46	49	6
Application Software Products	57	21	69	80	93	106	121	138	15
Professional Services	190	5	200	200	205	210	220	230	3
Network Services	47	34	63	82	106	137	177	229	29
Systems Operations	24	25	30	35	41	49	59	70	18
Systems Integration	13	23	16	19	23	28	34	41	21
Industry Sectors Total	455	12	510	545	600	665	750	850	11

Exhibit A-8

Industry Sectors, Utilities, Italy

	Lira Billions							
Sector	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Equipment Sales	255	6	270	295	330	360	385	410	9
Equipment Services	119	10	131	145	164	180	192	205	9
Software Products	103	12	115	135	160	184	207	235	15
Other Information Services	295	10	325	355	415	475	535	590	13
Data Communications	75	15	86	99	116	133	148	165	14
Facilities/ Administration	180	3	185	195	215	235	250	265	7
In-house Staff	460	5	485	525	585	615	650	685	7
IT Budget Total	1,500	6	1,597	1,749	1,985	2,182	2,367	2,555	10
Processing Services	28	7	30	33	38	42	46	50	11
Turnkey Systems	15	0	15	16	18	19	20	21	7
Application Software Products	23	13	26	31	37	43	48	54	16
Professional Services	190	5	200	215	245	275	305	335	11
Network Services	8	13	9	11	13	15	17	19	16
Systems Operations	18	22	22	27	34	43	53	65	24
Systems Integration	50	16	58	69	84	100	115	133	18
Industry Sectors Total	330	9	360	400	470	535	605	675	13

Exhibit A-9

Industry Sectors, Telecommunications, Italy

	Lira Billions							
Sector	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Equipment Sales	225	13	255	295	345	400	460	525	16
Equipment Services	85	12	95	106	118	131	143	156	10
Software Products	81	14	92	108	126	145	166	190	16
Other Information Services	201	11	223	252	290	338	385	440	15
Data Communications	79	16	92	107	123	142	161	183	15
Facilities/ Administration	110	5	116	125	136	150	163	177	9
In-house Staff	320	8	345	375	410	435	465	500	8
IT Budget Total	1,000	22	1,218	1,368	1,548	1,741	1,943	2,171	12
Processing Services	29	7	31	34	38	42	46	50	10
Turnkey Systems	16	6	17	18	20	22	23	24	7
Application Software Products	24	17	28	33	39	45	51	58	16
Professional Services	118	8	127	139	156	175	197	221	12
Network Services	7	29	9	12	16	21	27	35	31
Systems Operations	12	25	15	19	24	31	39	49	27
Systems Integration	30	17	35	41	49	59	69	80	18
Industry Sectors Total	235	11	260	295	340	395	450	515	15

Exhibit A-10

Industry Sectors, Retail Distribution, Italy

Sector	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Equipment Sales	400	1	405	420	435	440	435	430	1
Equipment Services	165	3	170	175	180	180	180	180	1
Software Products	145	7	155	170	190	200	215	230	8
Other Information Services	185	8	200	210	230	250	270	290	8
Data Communications	67	7	72	77	82	86	88	90	5
Facilities/ Administration	275	-2	270	270	270	270	265	260	-1
In-house Staff	420	-7	390	370	355	320	290	265	-7
IT Budget Total	1,700	-2	1,662	1,692	1,742	1,746	1,743	1,745	1
Processing Services	19	0	19	19	20	20	20	20	1
Turnkey Systems	31	3	32	35	38	40	42	44	7
Application Software Products	48	15	55	64	74	83	92	102	13
Professional Services	83	-1	82	82	85	86	87	88	1
Network Services	30	20	36	44	53	63	74	87	19
Systems Operations	6	17	7	8	10	12	14	17	19
Systems Integration	6	17	7	8	10	12	14	16	18
Industry Sectors Total	225	7	240	260	290	315	345	375	9

Lira Billions

Exhibit A-11

Industry Sectors, Wholesale Distribution, Italy

Sector	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Equipment Sales	465	-5	440	415	390	370	350	330	-6
Equipment Services	195	0	195	190	180	175	170	165	-3
Software Products	175	6	185	195	200	205	210	220	4
Other Information Services	245	2	250	250	255	275	290	305	4
Data Communications	80	2	82	82	82	82	82	82	0
Facilities/ Administration	330	-8	305	280	260	250	240	230	-5
In-house Staff	515	-6	485	460	435	400	380	360	-6
IT Budget Total	2,200	-12	1,942	1,872	1,802	1,757	1,722	1,692	-3
Processing Services	18	-6	17	16	15	14	13	13	-5
Turnkey Systems	40	0	40	41	42	43	44	45	2
Application Software Products	63	10	69	75	82	88	95	102	8
Professional Services	126	-2	123	120	120	120	123	126	0
Network Services	34	15	39	45	51	58	66	76	14
Systems Operations	6	33	8	10	12	15	19	23	24
Systems Integration	6	17	7	8	9	10	11	12	11
Industry Sectors Total	295	3	305	315	330	350	370	395	5

Lira Billions

Exhibit A-12

Industry Sectors, Banking & Finance, Italy

Sector	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
			Lira Billions						
Equipment Sales	1,900	5	2,000	2,100	2,200	2,250	2,250	2,250	2
Equipment Services	730	8	790	835	875	890	890	890	2
Software Products	600	13	680	765	855	925	990	1,060	9
Other Information Services	1,100	9	1,200	1,300	1,450	1,600	1,700	1,850	9
Data Communications	815	12	915	1,010	1,105	1,175	1,225	1,280	7
Facilities/ Administration	955	3	980	1,005	1,040	1,065	1,070	1,075	2
In-house Staff	2,750	4	2,850	3,000	3,150	3,100	3,100	3,100	2
IT Budget Total	8,700	8	9,415	10,015	10,675	11,005	11,225	11,505	4
Processing Services	225	4	235	245	260	270	275	280	4
Turnkey Systems	175	11	195	220	245	270	290	310	10
Application Software Products	155	19	185	220	265	305	345	390	16
Professional Services	535	6	565	595	645	680	715	755	6
Network Services	93	25	116	144	179	217	259	309	22
Systems Operations	19	32	25	32	42	54	68	86	28
Systems Integration	75	7	80	85	90	95	95	95	3
Industry Sectors Total	1,275	10	1,400	1,540	1,725	1,890	2,045	2,225	10

Exhibit A-13

Industry Sectors, Insurance, Italy

Sector	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
			Lira Billions						
Equipment Sales	495	2	505	525	560	585	600	615	4
Equipment Services	185	5	195	205	215	225	230	235	4
Software Products	205	10	225	255	290	325	360	395	12
Other Information Services	355	7	380	405	450	500	545	595	9
Data Communications	205	10	225	245	270	295	315	335	8
Facilities/ Administration	245	0	245	250	260	270	275	280	3
In-house Staff	695	1	705	730	770	775	785	795	2
IT Budget Total	2,400	3	2,480	2,615	2,815	2,975	3,110	3,250	6
Processing Services	62	2	63	65	70	74	77	80	5
Turnkey Systems	83	6	88	97	109	120	130	141	10
Application Software Products	77	17	90	107	129	150	172	197	17
Professional Services	190	3	195	205	225	240	260	280	8
Network Services	24	21	29	36	45	56	68	83	23
Systems Operations	6	33	8	10	13	16	20	25	26
Systems Integration	30	3	31	33	35	37	38	39	5
Industry Sectors Total	470	7	505	555	625	695	765	845	11

Exhibit A-14

Industry Sectors, Healthcare, Italy

Sector	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Equipment Sales	370	7	395	420	445	450	455	460	3
Equipment Services	165	9	180	190	200	200	200	200	2
Software Products	185	16	215	245	280	305	335	365	11
Other Information Services	375	9	410	455	515	565	620	695	11
Data Communications	160	13	180	200	220	230	240	250	7
Facilities/ Administration	215	2	220	225	235	235	235	235	1
In-house Staff	625	5	655	685	715	690	685	680	1
IT Budget Total	1,900	19	2,255	2,420	2,610	2,675	2,770	2,885	5
Processing Services	68	6	72	76	82	84	86	88	4
Turnkey Systems	46	17	54	64	76	86	98	111	16
Application Software Products	81	20	97	116	139	156	175	197	15
Professional Services	195	5	205	215	235	245	260	275	6
Network Services	6	33	8	10	13	16	20	24	25
Systems Operations	50	30	65	82	104	128	158	195	25
Systems Integration	18	17	21	24	28	31	34	38	13
Industry Sectors Total	465	12	520	585	675	745	830	930	12

Lira Billions

Exhibit A-15

Industry Sectors, Education, Italy

Sector	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Equipment Sales	150	0	150	150	150	150	150	150	0
Equipment Services	75	-1	74	72	69	66	63	60	-4
Software Products	64	-2	63	62	59	57	55	54	-3
Other Information Services	104	-2	102	99	98	100	102	103	0
Data Communications	70	3	72	73	73	73	73	73	0
Facilities/ Administration	95	-5	90	85	80	75	70	65	-6
In-house Staff	370	-7	345	320	300	270	250	235	-7
IT Budget Total	900	0	896	861	829	791	763	740	-4
Processing Services	7	0	7	7	7	7	7	7	0
Turnkey Systems	14	-7	13	12	11	10	9	8	-9
Application Software Products	20	-5	19	18	17	16	15	14	-6
Professional Services	72	-4	69	67	67	67	68	69	0
Network Services	3	0	3	3	3	3	3	3	0
Systems Operations	1	0	1	1	1	1	1	1	0
Systems Integration	4	-25	3	2	1	1	1	1	-20
Industry Sectors Total	120	-4	115	110	105	105	105	105	-2

Lira Billions

Exhibit A-16

Industry Sectors, Local Government, Italy

Sector	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
			Lira Billions						
Equipment Sales	500	1	505	510	515	520	525	530	1
Equipment Services	215	4	223	227	229	231	233	235	1
Software Products	190	8	205	225	245	270	295	325	10
Other Information Services	525	4	545	560	595	635	685	740	6
Data Communications	205	7	220	235	250	265	280	295	6
Facilities/ Administration	275	-2	270	265	260	260	260	260	-1
In-house Staff	890	-1	885	880	875	845	840	835	-1
IT Budget Total	2,700	6	2,853	2,902	2,969	3,026	3,118	3,220	2
Processing Services	68	0	68	68	70	72	74	76	2
Turnkey Systems	32	6	34	37	40	44	48	53	9
Application Software Products	54	17	63	73	85	97	111	127	15
Professional Services	325	0	325	325	335	345	365	385	3
Network Services	5	0	5	5	5	5	5	5	0
Systems Operations	47	23	58	68	81	98	118	142	20
Systems Integration	52	12	58	65	73	83	93	105	13
Industry Sectors Total	585	4	610	640	690	745	815	895	8

Exhibit A-17

Industry Sectors, Central Government, Italy

Sector	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
			Lira Billions						
Equipment Sales	865	-8	800	740	685	635	585	540	-8
Equipment Services	370	-1	365	355	340	325	310	295	-4
Software Products	280	2	285	295	300	305	310	320	2
Other Information Services	850	-3	825	795	785	790	800	810	0
Data Communications	355	3	365	370	370	370	370	370	0
Facilities/ Administration	480	-7	445	410	385	365	350	335	-6
In-house Staff	1,535	-7	1,435	1,340	1,250	1,130	1,055	985	-7
IT Budget Total	4,800	-6	4,520	4,305	4,115	3,920	3,780	3,655	-4
Processing Services	93	-4	89	85	83	81	79	77	-3
Turnkey Systems	31	3	32	34	36	38	40	43	6
Application Software Products	49	4	51	53	55	56	57	58	3
Professional Services	540	-8	495	450	425	400	385	370	-6
Network Services	17	12	19	22	25	29	33	38	15
Systems Operations	58	21	70	80	93	109	128	150	16
Systems Integration	110	9	120	130	140	155	170	185	9
Industry Sectors Total	900	-3	875	855	855	870	890	920	1

Exhibit A-18

Industry Sectors, Business Services, Italy

Sector		Lira Billions							
	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Equipment Sales	105	5	110	115	120	125	130	135	4
Equipment Services	62	3	64	65	65	65	65	65	0
Software Products	122	11	135	151	168	185	205	227	11
Other Information Services	310	2	315	320	340	365	390	420	6
Data Communications	51	8	55	59	62	65	69	73	6
Facilities/ Administration	102	-3	99	96	94	94	94	94	-1
In-house Staff	250	0	250	250	250	240	240	240	-1
IT Budget Total	1,000	3	1,028	1,056	1,099	1,139	1,193	1,254	4
Processing Services	37	3	38	39	40	41	42	43	3
Turnkey Systems	47	17	55	66	79	94	112	134	19
Application Software Products	76	12	85	96	108	119	131	145	11
Professional Services	225	0	225	225	235	245	260	275	4
Network Services	6	17	7	8	9	11	13	15	16
Systems Operations	11	18	13	14	16	18	20	22	11
Systems Integration	6	17	7	8	9	10	11	12	11
Industry Sectors Total	410	5	430	455	495	540	590	645	8

Exhibit A-19

Industry Sectors, Other Industries, Italy

Sector		Lira Billions							
	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Equipment Sales	265	-11	235	220	210	200	190	180	-5
Equipment Services	105	-6	99	96	92	88	84	81	-4
Software Products	111	-2	109	112	114	115	117	120	2
Other Information Services	273	-8	250	238	231	230	228	226	-2
Data Communications	102	-3	99	99	98	97	96	95	-1
Facilities/ Administration	135	-11	120	110	105	100	95	90	-6
In-house Staff	400	-10	360	340	320	290	275	260	-6
IT Budget Total	1,500	-15	1,272	1,215	1,170	1,120	1,085	1,052	-4
Processing Services	24	-13	21	20	19	18	17	16	-5
Turnkey Systems	26	-15	22	21	20	19	18	17	-5
Application Software Products	48	2	49	52	55	57	60	63	5
Professional Services	205	-10	185	175	170	165	165	165	-2
Network Services	2	0	2	2	2	2	2	2	0
Systems Operations	10	0	10	10	11	12	13	14	7
Systems Integration	5	0	5	5	5	5	5	5	0
Industry Sectors Total	320	-8	295	285	280	280	280	280	-1

D

Cross-Industry Sectors in Local Currency

Exhibit A-20

Information Services Market by Cross-Industry Sectors, Italy

| | Lira Billions | | | | | | | |
Sector	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Accounting	205	5	215	235	255	290	315	350	10
Education & Training	30	-17	25	25	25	30	30	35	7
Engineering & Scientific	60	0	60	65	70	80	85	95	10
Human Resources	145	-7	135	135	135	145	155	165	4
Office Systems	185	5	195	215	235	270	300	330	11
Planning & Analysis	175	0	175	185	200	220	240	265	9
Other Cross-Industry	75	0	75	80	85	90	100	105	7
Cross-Industry Sectors Total	875	1	885	940	1,010	1,125	1,230	1,340	9

Exhibit A-21

Cross-Industry Sectors, Accounting, Italy

| | Lira Billions | | | | | | | |
Sector	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Transaction Processing	7	-14	6	6	6	6	6	6	0
Turnkey Systems	34	-3	33	34	35	38	40	42	5
Application Software Products	165	6	175	195	215	245	270	300	11
Cross-Industry Sectors Total	205	5	215	235	255	290	315	350	10

Exhibit A-22

Cross-Industry Sectors, Education & Training, Italy

| | Lira Billions | | | | | | | |
Sector	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Transaction Processing	2	0	2	2	2	2	2	2	0
Turnkey Systems	14	0	14	14	14	15	16	17	4
Application Software Products	13	-15	11	11	11	12	13	14	5
Cross-Industry Sectors Total	30	-17	25	25	25	30	30	35	7

Exhibit A-23

Cross-Industry Sectors, Engineering & Scientific, Italy

Sector	Lira Billions								
	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Transaction Processing	6	-17	5	5	5	5	5	5	0
Turnkey Systems	9	-11	8	8	8	8	8	8	0
Application Software Products	46	2	47	52	57	66	73	81	12
Cross-Industry Sectors Total	60	0	60	65	70	80	85	95	10

Exhibit A-24

Cross-Industry Sectors, Human Resources, Italy

Sector	Lira Billions								
	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Transaction Processing	86	-10	77	73	69	69	69	69	-2
Turnkey Systems	5	0	5	5	5	6	7	8	10
Application Software Products	52	4	54	58	63	71	79	88	10
Cross-Industry Sectors Total	145	-7	135	135	135	145	155	165	4

Exhibit A-25

Cross-Industry Sectors, Office Systems, Italy

Sector	Lira Billions								
	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Transaction Processing	2	0	2	2	2	2	2	2	0
Turnkey Systems	10	0	10	11	12	13	14	15	8
Application Software Products	173	6	183	203	223	254	282	313	11
Cross-Industry Sectors Total	185	5	195	215	235	270	300	330	11

Exhibit A-26

Cross-Industry Sectors, Planning & Analysis, Italy

Sector	Lira Billions								
	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Transaction Processing	10	-10	9	9	9	9	9	9	0
Turnkey Systems	5	0	5	5	5	6	7	8	10
Application Software Products	158	2	161	172	184	204	224	246	9
Cross-Industry Sectors Total	175	0	175	185	200	220	240	265	9

Exhibit A-27

Other Cross-Industry, Italy

Sector	Lira Billions								
	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Transaction Processing	5	0	5	5	5	5	5	5	0
Turnkey Systems	39	-3	38	39	40	43	46	49	5
Application Software Products	31	3	32	35	38	43	48	53	11
Cross-Industry Sectors Total	75	0	75	80	85	90	100	105	7

Information Services Industry Forecast Database, 1994-1999 Italy (US$ Million)

E

Forecast Database in US Dollars

Exhibit A-28

Top Level IT Expenditure, Italy

Sector	US$ Million								
	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Equipment Sales	4,800	-1	4,700	4,700	4,700	4,800	4,800	4,800	0
Equipment Services	2,050	2	2,080	2,090	2,100	2,110	2,110	2,100	0
Software Products	2,440	6	2,590	2,780	3,000	3,300	3,500	3,800	8
Other Information Services	3,900	2	4,000	4,100	4,400	4,700	5,100	5,500	7
Data Communications	1,710	9	1,850	1,990	2,140	2,300	2,440	2,620	7
Facilities/ Administration	2,640	-4	2,540	2,470	2,450	2,460	2,450	2,450	-1
In-house Staff	7,500	-3	7,300	7,200	7,100	6,800	6,700	6,700	-2
IT Budget Total	22,500	1	22,800	23,100	23,700	24,000	24,600	25,400	2

Exhibit A-29

Information Services Market
Forecast by Delivery Mode and Submode
Italy, 1994-1999

Delivery Modes	US$ Million								
	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR(%)
Software and Services Total (ex. Equipment Services)	6,700	4	7,000	7,300	7,800	8,400	9,100	9,800	7
Professional Services	2,020	-1	2,010	2,000	2,080	2,140	2,250	2,360	3
- IS Consulting	292	10	320	340	360	410	470	530	10
- Education & Training	146	6	155	155	158	170	184	199	5
- Custom Software	1,570	-4	1,510	1,490	1,530	1,530	1,560	1,580	1
- Application Management	15	24	18	21	25	32	40	51	23
Systems Integration	287	9	310	340	380	420	470	520	10
- Equipment	82	0	82	88	94	99	108	117	7
- Application Software	56	0	56	67	82	99	123	152	22
- System Software	23	0	23	26	29	32	35	38	10
- Professional Services	120	22	146	155	167	184	193	196	6
- Other	6	0	6	6	8	9	10	12	15
Systems Operations	205	23	251	295	350	430	520	630	20
- Platform Operations	58	15	67	70	73	85	94	117	12
- Application Operations	117	25	146	175	216	263	320	380	21
- Desktop Services	29	30	38	50	64	82	105	132	28
Processing Services	690	-2	680	680	690	710	720	740	2
- Transaction Processing	620	-2	610	600	610	620	630	640	1
- Utility Processing	9	0	9	9	9	9	9	9	0
- Other Processing	64	5	67	70	73	79	85	91	6
Network Services	380	14	430	500	570	670	770	900	16
- Electronic Info Svcs	234	5	246	257	269	281	281	281	3
- Network Applications	117	30	152	199	257	330	430	540	29
- Network Management	29	20	35	41	47	56	64	73	16
System Software Product	1,350	4	1,400	1,460	1,520	1,580	1,640	1,700	4
- Mainframe	530	-4	510	470	450	430	410	370	-6
- Minicomputer	440	5	470	490	510	520	530	540	3
- Workstation /PC	370	16	430	500	560	630	700	780	13
Application Software Product	1,140	10	1,230	1,360	1,510	1,690	1,870	2,080	11
- Mainframe	91	-6	85	80	74	70	67	64	-6
- Minicomputer	310	-8	289	295	300	298	255	199	-7
- Workstation /PC	730	17	850	980	1,140	1,320	1,550	1,820	16
Turnkey Systems	610	3	630	670	710	770	830	880	7
- Equipment	310	3	320	330	340	360	370	380	4
- Application Software	149	0	149	161	178	199	219	240	10
- System Software	7	8	8	8	9	9	10	11	7
- Professional Services	155	2	158	170	187	208	228	251	10
Equipment Services	2,050	2	2,080	2,090	2,100	2,110	2,110	2,100	0
- Equipment Maintenance	1,370	0	1,380	1,360	1,330	1,290	1,230	1,160	-3
- Environmental Services	670	5	710	740	780	830	880	940	6
Grand Total Information Service Market	8,800	3	9,100	9,400	9,900	10,500	11,100	12,000	6

F

Sector Summary in US Dollars

Exhibit A-30

Information Services Market by Sector Summary, Italy

Sector	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
US$ Million									
Processing Services	550	-1	544	541	553	564	570	579	1
Turnkey Systems	547	3	561	596	640	693	743	798	7
Application Software Products	760	10	836	930	1,047	1,164	1,292	1,439	11
Professional Services	2,023	-1	2,006	2,000	2,076	2,140	2,246	2,357	3
Network Services	263	18	310	365	439	526	629	754	19
Systems Operations	205	23	251	295	354	430	520	629	20
Systems Integration	287	9	313	342	380	424	468	515	10
Industry Sectors Total	4,649	4	4,825	5,058	5,497	5,936	6,462	7,076	8
Transaction Processing	70	-13	61	58	58	58	58	58	-1
Turnkey Systems	67	0	67	67	70	76	82	85	5
Application Software Products	374	4	389	424	462	523	579	640	10
Cross-Industry Sectors Total	512	1	518	550	591	658	719	784	9
Equipment Services	2,047	2	2,082	2,094	2,099	2,111	2,105	2,099	0
System Software Products	1,345	4	1,404	1,462	1,520	1,579	1,637	1,696	4
Utility and Other Processing	73	4	76	79	82	88	94	99	6
Other Electronic Info Services	117	5	123	129	135	140	140	140	3
Generic Sectors Total	3,582	3	3,684	3,763	3,836	3,918	3,977	4,035	2
Total Information Services	8,772	3	9,006	9,357	9,942	10,526	11,170	11,871	6

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G

Industry Sectors in US Dollars

Exhibit A-31

Information Services Market by Industry Sectors, Italy

Sector	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Discrete Manufacturing	699	-7	652	649	652	690	734	787	4
Process Manufacturing	380	7	406	415	450	500	561	632	9
Transportation	266	12	298	319	351	389	439	497	11
Utilities	193	9	211	234	275	313	354	395	13
Telecommunications	137	11	152	173	199	231	263	301	15
Retail Distribution	132	7	140	152	170	184	202	219	9
Wholesale Distribution	173	3	178	184	193	205	216	231	5
Banking & Finance	746	10	819	901	1,009	1,105	1,196	1,301	10
Insurance	275	7	295	325	365	406	447	494	11
Healthcare	272	12	304	342	395	436	485	544	12
Education	70	-4	67	64	61	61	61	61	-2
Local Government	342	4	357	374	404	436	477	523	8
Central Government	526	-3	512	500	500	509	520	538	1
Business Services	240	5	251	266	289	316	345	377	8
Other Industries	187	-8	173	167	164	164	164	164	-1
Industry Sectors Total	4,649	4	4,825	5,058	5,497	5,936	6,462	7,076	8

US$ Million

Exhibit A-32

Industry Sectors, Discrete Manufacturing, Italy

Sector	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Equipment Sales	713	-15	608	550	497	474	450	427	-7
Equipment Services	374	-11	333	304	275	263	251	240	-6
Software Products	450	-4	433	433	427	444	462	485	2
Other Information Services	450	-10	404	392	386	404	433	456	2
Data Communications	164	0	164	170	173	184	199	213	5
Facilities/ Administration	333	-18	275	240	211	199	187	181	-8
In-house Staff	1,257	-16	1,053	936	848	789	731	702	-8
IT Budget Total	3,743	-13	3,269	3,023	2,816	2,757	2,713	2,705	-4
Processing Services	74	-21	58	49	42	37	34	30	-12
Turnkey Systems	146	-10	132	129	126	129	132	135	0
Application Software Products	213	0	213	222	231	249	266	287	6
Professional Services	143	-14	123	111	105	105	108	111	-2
Network Services	67	4	70	76	83	95	108	124	12
Systems Operations	31	11	35	38	43	50	60	71	15
Systems Integration	23	-3	23	23	24	26	27	29	5
Industry Sectors Total	699	-7	652	649	652	690	734	787	4

US$ Million

Exhibit A-33

Industry Sectors, Process Manufacturing, Italy

Sector	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
			US$ Million						
Equipment Sales	436	1	439	418	412	421	430	442	0
Equipment Services	181	3	187	178	175	178	181	184	0
Software Products	208	8	225	234	251	275	304	336	8
Other Information Services	272	6	289	287	307	339	377	421	8
Data Communications	173	7	184	184	190	202	213	228	4
Facilities/ Administration	237	-2	231	213	205	211	216	222	-1
In-house Staff	696	-1	690	649	632	620	626	632	-2
IT Budget Total	2,222	1	2,246	2,164	2,173	2,246	2,348	2,465	2
Processing Services	26	0	26	25	25	25	26	26	0
Turnkey Systems	56	5	58	58	61	67	73	79	6
Application Software Products	91	13	102	111	126	143	164	187	13
Professional Services	132	0	132	126	129	135	143	155	3
Network Services	32	19	37	43	50	61	74	89	19
Systems Operations	18	23	22	25	29	36	45	56	21
Systems Integration	26	7	28	29	30	33	36	40	7
Industry Sectors Total	380	7	406	415	450	500	561	632	9

Exhibit A-34

Industry Sectors, Transportation, Italy

Sector	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
			US$ Million						
Equipment Sales	111	-3	108	99	91	82	76	70	-8
Equipment Services	49	8	53	54	54	55	56	56	1
Software Products	64	18	76	85	96	105	117	132	12
Other Information Services	225	10	249	263	284	316	354	401	10
Data Communications	46	39	64	85	112	147	194	254	32
Facilities/ Administration	79	4	82	79	79	79	79	79	-1
In-house Staff	173	-2	170	158	146	132	123	114	-8
IT Budget Total	702	14	801	823	863	916	998	1,106	7
Processing Services	53	3	55	54	54	54	54	54	0
Turnkey Systems	19	9	21	22	23	25	27	29	6
Application Software Products	33	21	40	47	54	62	71	81	15
Professional Services	111	5	117	117	120	123	129	135	3
Network Services	27	34	37	48	62	80	104	134	29
Systems Operations	14	25	18	20	24	29	35	41	18
Systems Integration	8	23	9	11	13	16	20	24	21
Industry Sectors Total	266	12	298	319	351	389	439	497	11

Exhibit A-35

Industry Sectors, Utilities, Italy

Sector	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Equipment Sales	149	6	158	173	193	211	225	240	9
Equipment Services	70	10	77	85	96	105	112	120	9
Software Products	60	12	67	79	94	108	121	137	15
Other Information Services	173	10	190	208	243	278	313	345	13
Data Communications	44	15	50	58	68	78	87	96	14
Facilities/ Administration	105	3	108	114	126	137	146	155	7
In-house Staff	269	5	284	307	342	360	380	401	7
IT Budget Total	877	6	934	1,023	1,161	1,276	1,384	1,494	10
Processing Services	16	7	18	19	22	25	27	29	11
Turnkey Systems	9	0	9	9	11	11	12	12	7
Application Software Products	13	13	15	18	22	25	28	32	16
Professional Services	111	5	117	126	143	161	178	196	11
Network Services	5	13	5	6	8	9	10	11	16
Systems Operations	11	22	13	16	20	25	31	38	24
Systems Integration	29	16	34	40	49	58	67	78	18
Industry Sectors Total	193	9	211	234	275	313	354	395	13

Exhibit A-36

Industry Sectors, Telecommunications, Italy

Sector	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Equipment Sales	132	13	149	173	202	234	269	307	16
Equipment Services	50	12	56	62	69	77	84	91	10
Software Products	47	14	54	63	74	85	97	111	16
Other Information Services	118	11	130	147	170	198	225	257	15
Data Communications	46	16	54	63	72	83	94	107	15
Facilities/ Administration	64	5	68	73	80	88	95	104	9
In-house Staff	187	8	202	219	240	254	272	292	8
IT Budget Total	585	22	712	800	905	1,018	1,136	1,270	12
Processing Services	17	7	18	20	22	25	27	29	10
Turnkey Systems	9	6	10	11	12	13	13	14	7
Application Software Products	14	17	16	19	23	26	30	34	16
Professional Services	69	8	74	81	91	102	115	129	12
Network Services	4	29	5	7	9	12	16	20	31
Systems Operations	7	25	9	11	14	18	23	29	27
Systems Integration	18	17	20	24	29	35	40	47	18
Industry Sectors Total	137	11	152	173	199	231	263	301	15

Exhibit A-37

Industry Sectors, Retail Distribution, Italy

Sector	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
					US$ Million				
Equipment Sales	234	1	237	246	254	257	254	251	1
Equipment Services	96	3	99	102	105	105	105	105	1
Software Products	85	7	91	99	111	117	126	135	8
Other Information Services	108	8	117	123	135	146	158	170	8
Data Communications	39	7	42	45	48	50	51	53	5
Facilities/ Administration	161	-2	158	158	158	158	155	152	-1
In-house Staff	246	-7	228	216	208	187	170	155	-7
IT Budget Total	994	-2	972	989	1,019	1,021	1,019	1,020	1
Processing Services	11	0	11	11	12	12	12	12	1
Turnkey Systems	18	3	19	20	22	23	25	26	7
Application Software Products	28	15	32	37	43	49	54	60	13
Professional Services	49	-1	48	48	50	50	51	51	1
Network Services	18	20	21	26	31	37	43	51	19
Systems Operations	4	17	4	5	6	7	8	10	19
Systems Integration	4	17	4	5	6	7	8	9	18
Industry Sectors Total	132	7	140	152	170	184	202	219	9

Exhibit A-38

Industry Sectors, Wholesale Distribution, Italy

Sector	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
					US$ Million				
Equipment Sales	272	-5	257	243	228	216	205	193	-6
Equipment Services	114	0	114	111	105	102	99	96	-3
Software Products	102	6	108	114	117	120	123	129	4
Other Information Services	143	2	146	146	149	161	170	178	4
Data Communications	47	2	48	48	48	48	48	48	0
Facilities/ Administration	193	-8	178	164	152	146	140	135	-5
In-house Staff	301	-6	284	269	254	234	222	211	-6
IT Budget Total	1,287	-12	1,136	1,095	1,054	1,027	1,007	989	-3
Processing Services	11	-6	10	9	9	8	8	8	-5
Turnkey Systems	23	0	23	24	25	25	26	26	2
Application Software Products	37	10	40	44	48	51	56	60	8
Professional Services	74	-2	72	70	70	70	72	74	0
Network Services	20	15	23	26	30	34	39	44	14
Systems Operations	4	33	5	6	7	9	11	13	24
Systems Integration	4	17	4	5	5	6	6	7	11
Industry Sectors Total	173	3	178	184	193	205	216	231	5

Exhibit A-39

Industry Sectors, Banking & Finance, Italy

Sector	US$ Million								
	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Equipment Sales	1,111	5	1,170	1,228	1,287	1,316	1,316	1,316	2
Equipment Services	427	8	462	488	512	520	520	520	2
Software Products	351	13	398	447	500	541	579	620	9
Other Information Services	643	9	702	760	848	936	994	1,082	9
Data Communications	477	12	535	591	646	687	716	749	7
Facilities/ Administration	558	3	573	588	608	623	626	629	2
In-house Staff	1,608	4	1,667	1,754	1,842	1,813	1,813	1,813	2
IT Budget Total	5,088	8	5,506	5,857	6,243	6,436	6,564	6,728	4
Processing Services	132	4	137	143	152	158	161	164	4
Turnkey Systems	102	11	114	129	143	158	170	181	10
Application Software Products	91	19	108	129	155	178	202	228	16
Professional Services	313	6	330	348	377	398	418	442	6
Network Services	54	25	68	84	105	127	151	181	22
Systems Operations	11	32	15	19	25	32	40	50	28
Systems Integration	44	7	47	50	53	56	56	56	3
Industry Sectors Total	746	10	819	901	1,009	1,105	1,196	1,301	10

Exhibit A-40

Industry Sectors, Insurance, Italy

Sector	US$ Million								
	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Equipment Sales	289	2	295	307	327	342	351	360	4
Equipment Services	108	5	114	120	126	132	135	137	4
Software Products	120	10	132	149	170	190	211	231	12
Other Information Services	208	7	222	237	263	292	319	348	9
Data Communications	120	10	132	143	158	173	184	196	8
Facilities/ Administration	143	0	143	146	152	158	161	164	3
In-house Staff	406	1	412	427	450	453	459	465	2
IT Budget Total	1,404	3	1,450	1,529	1,646	1,740	1,819	1,901	6
Processing Services	36	2	37	38	41	43	45	47	5
Turnkey Systems	49	6	51	57	64	70	76	82	10
Application Software Products	45	17	53	63	75	88	101	115	17
Professional Services	111	3	114	120	132	140	152	164	8
Network Services	14	21	17	21	26	33	40	49	23
Systems Operations	4	33	5	6	8	9	12	15	26
Systems Integration	18	3	18	19	20	22	22	23	5
Industry Sectors Total	275	7	295	325	365	406	447	494	11

Exhibit A-41

Industry Sectors, Healthcare, Italy

Sector	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
			US$ Million						
Equipment Sales	216	7	231	246	260	263	266	269	3
Equipment Services	96	9	105	111	117	117	117	117	2
Software Products	108	16	126	143	164	178	196	213	11
Other Information Services	219	9	240	266	301	330	363	406	11
Data Communications	94	13	105	117	129	135	140	146	7
Facilities/ Administration	126	2	129	132	137	137	137	137	1
In-house Staff	365	5	383	401	418	404	401	398	1
IT Budget Total	1,111	19	1,319	1,415	1,526	1,564	1,620	1,687	5
Processing Services	40	6	42	44	48	49	50	51	4
Turnkey Systems	27	17	32	37	44	50	57	65	16
Application Software Products	47	20	57	68	81	91	102	115	15
Professional Services	114	5	120	126	137	143	152	161	6
Network Services	4	33	5	6	8	9	12	14	25
Systems Operations	29	30	38	48	61	75	92	114	25
Systems Integration	11	17	12	14	16	18	20	22	13
Industry Sectors Total	272	12	304	342	395	436	485	544	12

Exhibit A-42

Industry Sectors, Education, Italy

Sector	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
			US$ Million						
Equipment Sales	88	0	88	88	88	88	88	88	0
Equipment Services	44	-1	43	42	40	39	37	35	-4
Software Products	37	-2	37	36	35	33	32	32	-3
Other Information Services	61	-2	60	58	57	58	60	60	0
Data Communications	41	3	42	43	43	43	43	43	0
Facilities/ Administration	56	-5	53	50	47	44	41	38	-6
In-house Staff	216	-7	202	187	175	158	146	137	-7
IT Budget Total	526	0	524	504	485	463	446	433	-4
Processing Services	4	0	4	4	4	4	4	4	0
Turnkey Systems	8	-7	8	7	6	6	5	5	-9
Application Software Products	12	-5	11	11	10	9	9	8	-6
Professional Services	42	-4	40	39	39	39	40	40	0
Network Services	2	0	2	2	2	2	2	2	0
Systems Operations	1	0	1	1	1	1	1	1	0
Systems Integration	2	-25	2	1	1	1	1	1	-20
Industry Sectors Total	70	-4	67	64	61	61	61	61	-2

Exhibit A-43

Industry Sectors, Local Government, Italy

Sector	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
			US$ Million						
Equipment Sales	292	1	295	298	301	304	307	310	1
Equipment Services	126	4	130	133	134	135	136	137	1
Software Products	111	8	120	132	143	158	173	190	10
Other Information Services	307	4	319	327	348	371	401	433	6
Data Communications	120	7	129	137	146	155	164	173	6
Facilities/ Administration	161	-2	158	155	152	152	152	152	-1
In-house Staff	520	-1	518	515	512	494	491	488	-1
IT Budget Total	1,579	6	1,668	1,697	1,736	1,770	1,823	1,883	2
Processing Services	40	0	40	40	41	42	43	44	2
Turnkey Systems	19	6	20	22	23	26	28	31	9
Application Software Products	32	17	37	43	50	57	65	74	15
Professional Services	190	0	190	190	196	202	213	225	3
Network Services	3	0	3	3	3	3	3	3	0
Systems Operations	27	23	34	40	47	57	69	83	20
Systems Integration	30	12	34	38	43	49	54	61	13
Industry Sectors Total	342	4	357	374	404	436	477	523	8

Exhibit A-44

Industry Sectors, Central Government, Italy

Sector	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
			US$ Million						
Equipment Sales	506	-8	468	433	401	371	342	316	-8
Equipment Services	216	-1	213	208	199	190	181	173	-4
Software Products	164	2	167	173	175	178	181	187	2
Other Information Services	497	-3	482	465	459	462	468	474	0
Data Communications	208	3	213	216	216	216	216	216	0
Facilities/ Administration	281	-7	260	240	225	213	205	196	-6
In-house Staff	898	-7	839	784	731	661	617	576	-7
IT Budget Total	2,807	-6	2,643	2,518	2,406	2,292	2,211	2,137	-4
Processing Services	54	-4	52	50	49	47	46	45	-3
Turnkey Systems	18	3	19	20	21	22	23	25	6
Application Software Products	29	4	30	31	32	33	33	34	3
Professional Services	316	-8	289	263	249	234	225	216	-6
Network Services	10	12	11	13	15	17	19	22	15
Systems Operations	34	21	41	47	54	64	75	88	16
Systems Integration	64	9	70	76	82	91	99	108	9
Industry Sectors Total	526	-3	512	500	500	509	520	538	1

Exhibit A-45

Industry Sectors, Business Services, Italy

Sector	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
					US$ Million				
Equipment Sales	61	5	64	67	70	73	76	79	4
Equipment Services	36	3	37	38	38	38	38	38	0
Software Products	71	11	79	88	98	108	120	133	11
Other Information Services	181	2	184	187	199	213	228	246	6
Data Communications	30	8	32	35	36	38	40	43	6
Facilities/ Administration	60	-3	58	56	55	55	55	55	-1
In-house Staff	146	0	146	146	146	140	140	140	-1
IT Budget Total	585	3	601	618	643	666	698	733	4
Processing Services	22	3	22	23	23	24	25	25	3
Turnkey Systems	27	17	32	39	46	55	65	78	19
Application Software Products	44	12	50	56	63	70	77	85	11
Professional Services	132	0	132	132	137	143	152	161	4
Network Services	4	17	4	5	5	6	8	9	16
Systems Operations	6	18	8	8	9	11	12	13	11
Systems Integration	4	17	4	5	5	6	6	7	11
Industry Sectors Total	240	5	251	266	289	316	345	377	8

Exhibit A-46

Industry Sectors, Other Industries, Italy

Sector	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
					US$ Million				
Equipment Sales	155	-11	137	129	123	117	111	105	-5
Equipment Services	61	-6	58	56	54	51	49	47	-4
Software Products	65	-2	64	65	67	67	68	70	2
Other Information Services	160	-8	146	139	135	135	133	132	-2
Data Communications	60	-3	58	58	57	57	56	56	-1
Facilities/ Administration	79	-11	70	64	61	58	56	53	-6
In-house Staff	234	-10	211	199	187	170	161	152	-6
IT Budget Total	877	-15	744	711	684	655	635	615	-4
Processing Services	14	-13	12	12	11	11	10	9	-5
Turnkey Systems	15	-15	13	12	12	11	11	10	-5
Application Software Products	28	2	29	30	32	33	35	37	5
Professional Services	120	-10	108	102	99	96	96	96	-2
Network Services	1	0	1	1	1	1	1	1	0
Systems Operations	6	0	6	6	6	7	8	8	7
Systems Integration	3	0	3	3	3	3	3	3	0
Industry Sectors Total	187	-8	173	167	164	164	164	164	-1

H

Cross-Industry Sectors in US Dollars

Exhibit A-47

Information Services Market by Cross-Industry Sectors, Italy

Sector	US$ Million								
	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Accounting	120	5	126	137	149	170	184	205	10
Education & Training	18	-17	15	15	15	18	18	20	7
Engineering & Scientific	35	0	35	38	41	47	50	56	10
Human Resources	85	-7	79	79	79	85	91	96	4
Office Systems	108	5	114	126	137	158	175	193	11
Planning & Analysis	102	0	102	108	117	129	140	155	9
Other Cross-Industry	44	0	44	47	50	53	58	61	7
Cross-Industry Sectors Total	512	1	518	550	591	658	719	784	9

Exhibit A-27

Cross-Industry Sectors, Accounting, Italy

Sector	US$ Million								
	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Transaction Processing	4	-14	4	4	4	4	4	4	0
Turnkey Systems	20	-3	19	20	20	22	23	25	5
Application Software Products	96	6	102	114	126	143	158	175	11
Cross-Industry Sectors Total	120	5	126	137	149	170	184	205	10

Exhibit A-49

Cross-Industry Sectors, Education & Training, Italy

Sector	US$ Million								
	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Transaction Processing	1	0	1	1	1	1	1	1	0
Turnkey Systems	8	0	8	8	8	9	9	10	4
Application Software Products	8	-15	6	6	6	7	8	8	5
Cross-Industry Sectors Total	18	-17	15	15	15	18	18	20	7

Exhibit A-50

Cross-Industry Sectors, Engineering & Scientific, Italy

Sector	US$ Million								
	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Transaction Processing	4	-17	3	3	3	3	3	3	0
Turnkey Systems	5	-11	5	5	5	5	5	5	0
Application Software Products	27	2	27	30	33	39	43	47	12
Cross-Industry Sectors Total	35	0	35	38	41	47	50	56	10

Exhibit A-51

Cross-Industry Sectors, Human Resources, Italy

Sector	US$ Million								
	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Transaction Processing	50	-10	45	43	40	40	40	40	-2
Turnkey Systems	3	0	3	3	3	4	4	5	10
Application Software Products	30	4	32	34	37	42	46	51	10
Cross-Industry Sectors Total	85	-7	79	79	79	85	91	96	4

Exhibit A-52

Cross-Industry Sectors, Office Systems, Italy

Sector	US$ Million								
	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Transaction Processing	1	0	1	1	1	1	1	1	0
Turnkey Systems	6	0	6	6	7	8	8	9	8
Application Software Products	101	6	107	119	130	149	165	183	11
Cross-Industry Sectors Total	108	5	114	126	137	158	175	193	11

Exhibit A-53

Cross-Industry Sectors, Planning & Analysis, Italy

Sector	US$ Million								94-99
	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	CAGR (%)
Transaction Processing	6	-10	5	5	5	5	5	5	0
Turnkey Systems	3	0	3	3	3	4	4	5	10
Application Software Products	92	2	94	101	108	119	131	144	9
Cross-Industry Sectors Total	102	0	102	108	117	129	140	155	9

Exhibit A-54

Other Cross-Industry, Italy

Sector	US$ Million								94-99
	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	CAGR (%)
Transaction Processing	3	0	3	3	3	3	3	3	0
Turnkey Systems	23	-3	22	23	23	25	27	29	5
Application Software Products	18	3	19	20	22	25	28	31	11
Cross-Industry Sectors Total	44	0	44	47	50	53	58	61	7

Information Services Industry
Forecast Database, 1994-1999
Italy
(ECU Million)

I

Forecast Database in ECUs

Exhibit A-55

Top Level IT Expenditure, Italy

Sector	ECU Million								94-99
	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	CAGR (%)
Equipment Sales	4,300	-1	4,200	4,200	4,300	4,300	4,300	4,300	0
Equipment Services	1,840	2	1,870	1,880	1,890	1,900	1,900	1,890	0
Software Products	2,200	6	2,330	2,500	2,700	2,930	3,200	3,400	8
Other Information Services	3,500	2	3,600	3,700	4,000	4,200	4,600	4,900	7
Data Communications	1,540	9	1,670	1,800	1,930	2,070	2,200	2,360	7
Facilities/ Administration	2,370	-4	2,290	2,230	2,210	2,210	2,210	2,210	-1
In-house Staff	6,800	-3	6,600	6,500	6,400	6,200	6,100	6,000	-2
IT Budget Total	20,300	1	20,500	20,800	21,300	21,600	22,100	22,900	2

Exhibit A-56

Information Services Market
Forecast by Delivery Mode and Submode
Italy, 1994-1999

	ECU Million								
	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR(%)
Software and Services Total (ex. Equipment Services)	6,000	4	6,300	6,600	7,000	7,600	8,200	8,800	7
Professional Services	1,820	-1	1,810	1,800	1,870	1,930	2,020	2,120	3
- IS Consulting	263	10	289	300	330	370	420	470	10
- Education & Training	132	6	139	139	142	153	166	179	5
- Custom Software	1,420	-4	1,360	1,340	1,380	1,380	1,400	1,420	1
- Application Management	13	24	16	19	23	28	36	46	23
Systems Integration	258	9	282	310	340	380	420	460	10
- Equipment	74	0	74	79	84	89	97	105	7
- Application Software	50	0	50	61	74	89	111	137	22
- System Software	21	0	21	24	26	29	32	34	10
- Professional Services	108	22	132	139	150	166	174	176	6
- Other	5	0	5	6	7	8	9	11	15
Systems Operations	184	23	226	266	320	390	470	570	20
- Platform Operations	53	15	61	63	66	76	84	105	12
- Application Operations	105	25	132	158	195	237	289	340	21
- Desktop Services	26	30	34	45	58	74	95	118	28
Processing Services	620	-2	610	610	620	640	650	660	2
- Transaction Processing	560	-2	550	540	550	560	570	570	1
- Utility Processing	8	0	8	8	8	8	8	8	0
- Other Processing	58	5	61	63	66	71	76	82	6
Network Services	340	14	390	450	520	600	700	810	16
- Electronic Info Svcs	211	5	221	232	242	253	253	253	3
- Network Applications	105	30	137	179	232	297	380	490	29
- Network Management	26	20	32	37	42	50	58	66	16
System Software Product	1,210	4	1,260	1,320	1,370	1,420	1,470	1,530	4
- Mainframe	480	-4	460	430	410	380	370	340	-6
- Minicomputer	400	5	420	440	460	470	480	480	3
- Workstation /PC	340	16	390	450	510	570	630	710	13
Application Software Product	1,020	10	1,110	1,220	1,360	1,520	1,680	1,870	11
- Mainframe	82	-6	77	72	67	63	60	57	-6
- Minicomputer	282	-8	260	265	270	268	229	179	-7
- Workstation /PC	660	17	770	880	1,020	1,190	1,400	1,640	16
Turnkey Systems	550	3	570	600	640	700	740	800	7
- Equipment	276	3	284	295	310	320	330	340	4
- Application Software	134	0	134	145	161	179	197	216	10
- System Software	6	8	7	7	8	8	9	9	7
- Professional Services	139	2	142	153	168	187	205	226	10
Equipment Services	1,840	2	1,870	1,880	1,890	1,900	1,900	1,890	0
- Equipment Maintenance	1,240	0	1,240	1,220	1,190	1,160	1,100	1,050	-3
- Environmental Services	610	5	630	660	700	740	790	840	6
Grand Total Information Service Market	7,900	3	8,200	8,400	8,900	9,500	10,000	10,800	6

J

Sector Summary in ECUs

Exhibit A-57

A-32 appears at bottom

Information Services Market by Sector Summary, Italy

Sector	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
				ECU Million					
Processing Services	495	-1	489	487	497	508	513	521	1
Turnkey Systems	492	3	505	537	576	624	668	718	7
Application Software Products	684	10	753	837	942	1,047	1,163	1,295	11
Professional Services	1,821	-1	1,805	1,800	1,868	1,926	2,021	2,121	3
Network Services	237	18	279	329	395	474	566	679	19
Systems Operations	184	23	226	266	318	387	468	566	20
Systems Integration	258	9	282	308	342	382	421	463	10
Industry Sectors Total	4,184	4	4,342	4,553	4,947	5,342	5,816	6,368	8
Transaction Processing	63	-13	55	53	53	53	53	53	-1
Turnkey Systems	61	0	61	61	63	68	74	76	5
Application Software Products	337	4	350	382	416	471	521	576	10
Cross-Industry Sectors Total	461	1	466	495	532	592	647	705	9
Equipment Services	1,842	2	1,874	1,884	1,889	1,900	1,895	1,889	0
System Software Products	1,211	4	1,263	1,316	1,368	1,421	1,474	1,526	4
Utility and Other Processing	66	4	68	71	74	79	84	89	6
Other Electronic Info Services	105	5	111	116	121	126	126	126	3
Generic Sectors Total	3,224	3	3,316	3,387	3,453	3,526	3,579	3,632	2
Total Information Services	7,895	3	8,105	8,421	8,947	9,474	10,053	10,684	6

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Industry Sectors in ECUs

Exhibit A-58

Information Services Market by Industry Sectors, Italy

Sector	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
				ECU Million					
Discrete Manufacturing	629	-7	587	584	587	621	661	708	4
Process Manufacturing	342	7	366	374	405	450	505	568	9
Transportation	239	12	268	287	316	350	395	447	11
Utilities	174	9	189	211	247	282	318	355	13
Telecommunications	124	11	137	155	179	208	237	271	15
Retail Distribution	118	7	126	137	153	166	182	197	9
Wholesale Distribution	155	3	161	166	174	184	195	208	5
Banking & Finance	671	10	737	811	908	995	1,076	1,171	10
Insurance	247	7	266	292	329	366	403	445	11
Healthcare	245	12	274	308	355	392	437	489	12
Education	63	-4	61	58	55	55	55	55	-2
Local Government	308	4	321	337	363	392	429	471	8
Central Government	474	-3	461	450	450	458	468	484	1
Business Services	216	5	226	239	261	284	311	339	8
Other Industries	168	-8	155	150	147	147	147	147	-1
Industry Sectors Total	4,184	4	4,342	4,553	4,947	5,342	5,816	6,368	8

Exhibit A-59

Industry Sectors, Discrete Manufacturing, Italy

Sector	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
				ECU Million					
Equipment Sales	642	-15	547	495	447	426	405	384	-7
Equipment Services	337	-11	300	274	247	237	226	216	-6
Software Products	405	-4	389	389	384	400	416	437	2
Other Information Services	405	-10	363	353	347	363	389	411	2
Data Communications	147	0	147	153	155	166	179	192	5
Facilities/ Administration	300	-18	247	216	189	179	168	163	-8
In-house Staff	1,132	-16	947	842	763	711	658	632	-8
IT Budget Total	3,368	-13	2,942	2,721	2,534	2,482	2,442	2,434	-4
Processing Services	67	-21	53	44	37	34	31	27	-12
Turnkey Systems	132	-10	118	116	113	116	118	121	0
Application Software Products	192	0	192	200	208	224	239	258	6
Professional Services	129	-14	111	100	95	95	97	100	-2
Network Services	60	4	63	68	75	85	97	112	12
Systems Operations	28	11	31	34	38	45	54	64	15
Systems Integration	21	-3	21	21	22	23	25	26	5
Industry Sectors Total	629	-7	587	584	587	621	661	708	4

Exhibit A-60

Industry Sectors, Process Manufacturing, Italy

Sector	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
					ECU Million				
Equipment Sales	392	1	395	376	371	379	387	397	0
Equipment Services	163	3	168	161	158	161	163	166	0
Software Products	187	8	203	211	226	247	274	303	8
Other Information Services	245	6	261	258	276	305	339	379	8
Data Communications	155	7	166	166	171	182	192	205	4
Facilities/ Administration	213	-2	208	192	184	189	195	200	-1
In-house Staff	626	-1	621	584	568	558	563	568	-2
IT Budget Total	2,000	1	2,021	1,947	1,955	2,021	2,113	2,218	2
Processing Services	24	0	24	22	22	23	23	24	0
Turnkey Systems	50	5	53	53	55	61	66	71	6
Application Software Products	82	13	92	100	113	129	147	168	13
Professional Services	118	0	118	113	116	121	129	139	3
Network Services	28	19	34	38	45	55	66	81	19
Systems Operations	16	23	19	22	26	33	41	51	21
Systems Integration	24	7	25	26	27	30	33	36	7
Industry Sectors Total	342	7	366	374	405	450	505	568	9

Exhibit A-61

Industry Sectors, Transportation, Italy

Sector	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
					ECU Million				
Equipment Sales	100	-3	97	89	82	74	68	63	-8
Equipment Services	44	8	47	48	49	49	50	51	1
Software Products	58	18	68	76	87	95	105	118	12
Other Information Services	203	10	224	237	255	284	318	361	10
Data Communications	42	39	58	77	101	133	174	229	32
Facilities/ Administration	71	4	74	71	71	71	71	71	-1
In-house Staff	155	-2	153	142	132	118	111	103	-8
IT Budget Total	632	14	721	741	776	824	898	995	7
Processing Services	48	3	49	48	48	48	48	48	0
Turnkey Systems	17	9	19	20	21	23	24	26	6
Application Software Products	30	21	36	42	49	56	64	73	15
Professional Services	100	5	105	105	108	111	116	121	3
Network Services	25	34	33	43	56	72	93	121	29
Systems Operations	13	25	16	18	22	26	31	37	18
Systems Integration	7	23	8	10	12	15	18	22	21
Industry Sectors Total	239	12	268	287	316	350	395	447	11

Exhibit A-62

Industry Sectors, Utilities, Italy

Sector	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
					ECU Million				
Equipment Sales	134	6	142	155	174	189	203	216	9
Equipment Services	63	10	69	76	86	95	101	108	9
Software Products	54	12	61	71	84	97	109	124	15
Other Information Services	155	10	171	187	218	250	282	311	13
Data Communications	39	15	45	52	61	70	78	87	14
Facilities/ Administration	95	3	97	103	113	124	132	139	7
In-house Staff	242	5	255	276	308	324	342	361	7
IT Budget Total	789	6	841	921	1,045	1,148	1,246	1,345	10
Processing Services	15	7	16	17	20	22	24	26	11
Turnkey Systems	8	0	8	8	9	10	11	11	7
Application Software Products	12	13	14	16	19	23	25	28	16
Professional Services	100	5	105	113	129	145	161	176	11
Network Services	4	13	5	6	7	8	9	10	16
Systems Operations	9	22	12	14	18	23	28	34	24
Systems Integration	26	16	31	36	44	53	61	70	18
Industry Sectors Total	174	9	189	211	247	282	318	355	13

Exhibit A-63

Industry Sectors, Telecommunications, Italy

Sector	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
					ECU Million				
Equipment Sales	118	13	134	155	182	211	242	276	16
Equipment Services	45	12	50	56	62	69	75	82	10
Software Products	43	14	48	57	66	76	87	100	16
Other Information Services	106	11	117	133	153	178	203	232	15
Data Communications	42	16	48	56	65	75	85	96	15
Facilities/ Administration	58	5	61	66	72	79	86	93	9
In-house Staff	168	8	182	197	216	229	245	263	8
IT Budget Total	526	22	641	720	815	916	1,023	1,143	12
Processing Services	15	7	16	18	20	22	24	26	10
Turnkey Systems	8	6	9	9	11	12	12	13	7
Application Software Products	13	17	15	17	21	24	27	31	16
Professional Services	62	8	67	73	82	92	104	116	12
Network Services	4	29	5	6	8	11	14	18	31
Systems Operations	6	25	8	10	13	16	21	26	27
Systems Integration	16	17	18	22	26	31	36	42	18
Industry Sectors Total	124	11	137	155	179	208	237	271	15

Exhibit A-64

Industry Sectors, Retail Distribution, Italy

	ECU Million								
Sector	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Equipment Sales	211	1	213	221	229	232	229	226	1
Equipment Services	87	3	89	92	95	95	95	95	1
Software Products	76	7	82	89	100	105	113	121	8
Other Information Services	97	8	105	111	121	132	142	153	8
Data Communications	35	7	38	41	43	45	46	47	5
Facilities/ Administration	145	-2	142	142	142	142	139	137	-1
In-house Staff	221	-7	205	195	187	168	153	139	-7
IT Budget Total	895	-2	875	891	917	919	917	918	1
Processing Services	10	0	10	10	11	11	11	11	1
Turnkey Systems	16	3	17	18	20	21	22	23	7
Application Software Products	25	15	29	34	39	44	48	54	13
Professional Services	44	-1	43	43	45	45	46	46	1
Network Services	16	20	19	23	28	33	39	46	19
Systems Operations	3	17	4	4	5	6	7	9	19
Systems Integration	3	17	4	4	5	6	7	8	18
Industry Sectors Total	118	7	126	137	153	166	182	197	9

Exhibit A-65

Industry Sectors, Wholesale Distribution, Italy

	ECU Million								
Sector	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Equipment Sales	245	-5	232	218	205	195	184	174	-6
Equipment Services	103	0	103	100	95	92	89	87	-3
Software Products	92	6	97	103	105	108	111	116	4
Other Information Services	129	2	132	132	134	145	153	161	4
Data Communications	42	2	43	43	43	43	43	43	0
Facilities/ Administration	174	-8	161	147	137	132	126	121	-5
In-house Staff	271	-6	255	242	229	211	200	189	-6
IT Budget Total	1,158	-12	1,022	985	948	925	906	891	-3
Processing Services	9	-6	9	8	8	7	7	7	-5
Turnkey Systems	21	0	21	22	22	23	23	24	2
Application Software Products	33	10	36	39	43	46	50	54	8
Professional Services	66	-2	65	63	63	63	65	66	0
Network Services	18	15	21	24	27	31	35	40	14
Systems Operations	3	33	4	5	6	8	10	12	24
Systems Integration	3	17	4	4	5	5	6	6	11
Industry Sectors Total	155	3	161	166	174	184	195	208	5

Exhibit A-66

Industry Sectors, Banking & Finance, Italy

Sector	ECU Million								
	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Equipment Sales	1,000	5	1,053	1,105	1,158	1,184	1,184	1,184	2
Equipment Services	384	8	416	439	461	468	468	468	2
Software Products	316	13	358	403	450	487	521	558	9
Other Information Services	579	9	632	684	763	842	895	974	9
Data Communications	429	12	482	532	582	618	645	674	7
Facilities/ Administration	503	3	516	529	547	561	563	566	2
In-house Staff	1,447	4	1,500	1,579	1,658	1,632	1,632	1,632	2
IT Budget Total	4,579	8	4,955	5,271	5,618	5,792	5,908	6,055	4
Processing Services	118	4	124	129	137	142	145	147	4
Turnkey Systems	92	11	103	116	129	142	153	163	10
Application Software Products	82	19	97	116	139	161	182	205	16
Professional Services	282	6	297	313	339	358	376	397	6
Network Services	49	25	61	76	94	114	136	163	22
Systems Operations	10	32	13	17	22	28	36	45	28
Systems Integration	39	7	42	45	47	50	50	50	3
Industry Sectors Total	671	10	737	811	908	995	1,076	1,171	10

Exhibit A-67

Industry Sectors, Insurance, Italy

Sector	ECU Million								
	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Equipment Sales	261	2	266	276	295	308	316	324	4
Equipment Services	97	5	103	108	113	118	121	124	4
Software Products	108	10	118	134	153	171	189	208	12
Other Information Services	187	7	200	213	237	263	287	313	9
Data Communications	108	10	118	129	142	155	166	176	8
Facilities/ Administration	129	0	129	132	137	142	145	147	3
In-house Staff	366	1	371	384	405	408	413	418	2
IT Budget Total	1,263	3	1,305	1,376	1,482	1,566	1,637	1,711	6
Processing Services	33	2	33	34	37	39	41	42	5
Turnkey Systems	44	6	46	51	57	63	68	74	10
Application Software Products	41	17	47	56	68	79	91	104	17
Professional Services	100	3	103	108	118	126	137	147	8
Network Services	13	21	15	19	24	29	36	44	23
Systems Operations	3	33	4	5	7	8	11	13	26
Systems Integration	16	3	16	17	18	19	20	21	5
Industry Sectors Total	247	7	266	292	329	366	403	445	11

Exhibit A-68

Industry Sectors, Healthcare, Italy

Sector	ECU Million								
	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Equipment Sales	195	7	208	221	234	237	239	242	3
Equipment Services	87	9	95	100	105	105	105	105	2
Software Products	97	16	113	129	147	161	176	192	11
Other Information Services	197	9	216	239	271	297	326	366	11
Data Communications	84	13	95	105	116	121	126	132	7
Facilities/ Administration	113	2	116	118	124	124	124	124	1
In-house Staff	329	5	345	361	376	363	361	358	1
IT Budget Total	1,000	19	1,187	1,274	1,374	1,408	1,458	1,518	5
Processing Services	36	6	38	40	43	44	45	46	4
Turnkey Systems	24	17	28	34	40	45	52	58	16
Application Software Products	43	20	51	61	73	82	92	104	15
Professional Services	103	5	108	113	124	129	137	145	6
Network Services	3	33	4	5	7	8	11	13	25
Systems Operations	26	30	34	43	55	67	83	103	25
Systems Integration	9	17	11	13	15	16	18	20	13
Industry Sectors Total	245	12	274	308	355	392	437	489	12

Exhibit A-69

Industry Sectors, Education, Italy

Sector	ECU Million								
	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Equipment Sales	79	0	79	79	79	79	79	79	0
Equipment Services	39	-1	39	38	36	35	33	32	-4
Software Products	34	-2	33	33	31	30	29	28	-3
Other Information Services	55	-2	54	52	52	53	54	54	0
Data Communications	37	3	38	38	38	38	38	38	0
Facilities/ Administration	50	-5	47	45	42	39	37	34	-6
In-house Staff	195	-7	182	168	158	142	132	124	-7
IT Budget Total	474	0	472	453	436	416	402	389	-4
Processing Services	4	0	4	4	4	4	4	4	0
Turnkey Systems	7	-7	7	6	6	5	5	4	-9
Application Software Products	11	-5	10	9	9	8	8	7	-6
Professional Services	38	-4	36	35	35	35	36	36	0
Network Services	2	0	2	2	2	2	2	2	0
Systems Operations	1	0	1	1	1	1	1	1	0
Systems Integration	2	-25	2	1	1	1	1	1	-20
Industry Sectors Total	63	-4	61	58	55	55	55	55	-2

Exhibit A-70

Industry Sectors, Local Government, Italy

Sector	ECU Million								
	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Equipment Sales	263	1	266	268	271	274	276	279	1
Equipment Services	113	4	117	119	121	122	123	124	1
Software Products	100	8	108	118	129	142	155	171	10
Other Information Services	276	4	287	295	313	334	361	389	6
Data Communications	108	7	116	124	132	139	147	155	6
Facilities/ Administration	145	-2	142	139	137	137	137	137	-1
In-house Staff	468	-1	466	463	461	445	442	439	-1
IT Budget Total	1,421	6	1,502	1,527	1,563	1,593	1,641	1,695	2
Processing Services	36	0	36	36	37	38	39	40	2
Turnkey Systems	17	6	18	19	21	23	25	28	9
Application Software Products	28	17	33	38	45	51	58	67	15
Professional Services	171	0	171	171	176	182	192	203	3
Network Services	3	0	3	3	3	3	3	3	0
Systems Operations	25	23	31	36	43	52	62	75	20
Systems Integration	27	12	31	34	38	44	49	55	13
Industry Sectors Total	308	4	321	337	363	392	429	471	8

Exhibit A-71

Industry Sectors, Central Government, Italy

Sector	ECU Million								
	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Equipment Sales	455	-8	421	389	361	334	308	284	-8
Equipment Services	195	-1	192	187	179	171	163	155	-4
Software Products	147	2	150	155	158	161	163	168	2
Other Information Services	447	-3	434	418	413	416	421	426	0
Data Communications	187	3	192	195	195	195	195	195	0
Facilities/ Administration	253	-7	234	216	203	192	184	176	-6
In-house Staff	808	-7	755	705	658	595	555	518	-7
IT Budget Total	2,526	-6	2,379	2,266	2,166	2,063	1,989	1,924	-4
Processing Services	49	-4	47	45	44	43	42	41	-3
Turnkey Systems	16	3	17	18	19	20	21	23	6
Application Software Products	26	4	27	28	29	29	30	31	3
Professional Services	284	-8	261	237	224	211	203	195	-6
Network Services	9	12	10	12	13	15	17	20	15
Systems Operations	31	21	37	42	49	57	67	79	16
Systems Integration	58	9	63	68	74	82	89	97	9
Industry Sectors Total	474	-3	461	450	450	458	468	484	1

Exhibit A-72

Industry Sectors, Business Services, Italy

Sector	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
						ECU Million			
Equipment Sales	55	5	58	61	63	66	68	71	4
Equipment Services	33	3	34	34	34	34	34	34	0
Software Products	64	11	71	79	88	97	108	119	11
Other Information Services	163	2	166	168	179	192	205	221	6
Data Communications	27	8	29	31	33	34	36	38	6
Facilities/ Administration	54	-3	52	51	49	49	49	49	-1
In-house Staff	132	0	132	132	132	126	126	126	-1
IT Budget Total	526	3	541	556	578	599	628	660	4
Processing Services	19	3	20	21	21	22	22	23	3
Turnkey Systems	25	17	29	35	42	49	59	71	19
Application Software Products	40	12	45	51	57	63	69	76	11
Professional Services	118	0	118	118	124	129	137	145	4
Network Services	3	17	4	4	5	6	7	8	16
Systems Operations	6	18	7	7	8	9	11	12	11
Systems Integration	3	17	4	4	5	5	6	6	11
Industry Sectors Total	216	5	226	239	261	284	311	339	8

Exhibit A-73

Industry Sectors, Other Industries, Italy

Sector	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
						ECU Million			
Equipment Sales	139	-11	124	116	111	105	100	95	-5
Equipment Services	55	-6	52	51	48	46	44	43	-4
Software Products	58	-2	57	59	60	61	62	63	2
Other Information Services	144	-8	132	125	122	121	120	119	-2
Data Communications	54	-3	52	52	52	51	51	50	-1
Facilities/ Administration	71	-11	63	58	55	53	50	47	-6
In-house Staff	211	-10	189	179	168	153	145	137	-6
IT Budget Total	789	-15	669	639	616	589	571	554	-4
Processing Services	13	-13	11	11	10	9	9	8	-5
Turnkey Systems	14	-15	12	11	11	10	9	9	-5
Application Software Products	25	2	26	27	29	30	32	33	5
Professional Services	108	-10	97	92	89	87	87	87	-2
Network Services	1	0	1	1	1	1	1	1	0
Systems Operations	5	0	5	5	6	6	7	7	7
Systems Integration	3	0	3	3	3	3	3	3	0
Industry Sectors Total	168	-8	155	150	147	147	147	147	-1

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Cross-Industry Sectors in ECUs

Exhibit A-74

Information Services Market by Cross-Industry Sectors, Italy

Sector	ECU Million								
	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Accounting	108	5	113	124	134	153	166	184	10
Education & Training	16	-17	13	13	13	16	16	18	7
Engineering & Scientific	32	0	32	34	37	42	45	50	10
Human Resources	76	-7	71	71	71	76	82	87	4
Office Systems	97	5	103	113	124	142	158	174	11
Planning & Analysis	92	0	92	97	105	116	126	139	9
Other Cross-Industry	39	0	39	42	45	47	53	55	7
Cross-Industry Sectors Total	461	1	466	495	532	592	647	705	9

Exhibit A-54

Cross-Industry Sectors, Accounting, Italy

Sector	ECU Million								
	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Transaction Processing	4	-14	3	3	3	3	3	3	0
Turnkey Systems	18	-3	17	18	18	20	21	22	5
Application Software Products	87	6	92	103	113	129	142	158	11
Cross-Industry Sectors Total	108	5	113	124	134	153	166	184	10

Exhibit A-76

Cross-Industry Sectors, Education & Training, Italy

Sector	ECU Million								
	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Transaction Processing	1	0	1	1	1	1	1	1	0
Turnkey Systems	7	0	7	7	7	8	8	9	4
Application Software Products	7	-15	6	6	6	6	7	7	5
Cross-Industry Sectors Total	16	-17	13	13	13	16	16	18	7

Exhibit A-77

Cross-Industry Sectors, Engineering & Scientific, Italy

Sector	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
									ECU Million
Transaction Processing	3	-17	3	3	3	3	3	3	0
Turnkey Systems	5	-11	4	4	4	4	4	4	0
Application Software Products	24	2	25	27	30	35	38	43	12
Cross-Industry Sectors Total	32	0	32	34	37	42	45	50	10

Exhibit A-78

Cross-Industry Sectors, Human Resources, Italy

Sector	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
									ECU Million
Transaction Processing	45	-10	41	38	36	36	36	36	-2
Turnkey Systems	3	0	3	3	3	3	4	4	10
Application Software Products	27	4	28	31	33	37	42	46	10
Cross-Industry Sectors Total	76	-7	71	71	71	76	82	87	4

Exhibit A-79

Cross-Industry Sectors, Office Systems, Italy

Sector	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
									ECU Million
Transaction Processing	1	0	1	1	1	1	1	1	0
Turnkey Systems	5	0	5	6	6	7	7	8	8
Application Software Products	91	6	96	107	117	134	148	165	11
Cross-Industry Sectors Total	97	5	103	113	124	142	158	174	11

Exhibit A-80

Cross-Industry Sectors, Planning & Analysis, Italy

Sector	ECU Million							
	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Transaction Processing	5	-10	5	5	5	5	5	5	0
Turnkey Systems	3	0	3	3	3	3	4	4	10
Application Software Products	83	2	85	91	97	107	118	129	9
Cross-Industry Sectors Total	92	0	92	97	105	116	126	139	9

Exhibit A-81

Other Cross-Industry, Italy

Sector	ECU Million							
	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Transaction Processing	3	0	3	3	3	3	3	3	0
Turnkey Systems	21	-3	20	21	21	23	24	26	5
Application Software Products	16	3	17	18	20	23	25	28	11
Cross-Industry Sectors Total	39	0	39	42	45	47	53	55	7

M
Information Services Forecast Reconciliation in Local Currency

Exhibit A-82

Forecast Reconciliation, Italy, 1993-1998

Currency: Lira Billions	1993 Market				1998 Market				1993	1994
Delivery Mode	1993 Report (Fcst)	1994 Report (Act)	1993-1994 Variance (Amount)	(%)	1993 Report (Fcst)	1994 Report (Fcst)	1993-1994 Variance (Amount)	(%)	Report %CAGR (Fcst)	Report %CAGR (Fcst)
Software and Services Total (ex Equipment Services)	11,450	11,450	0	0	17,000	15,500	-1,500	-9	8	6
Professional Services	3,460	3,460	0	0	4,100	3,840	-260	-6	3	2
- IS Consulting	500	500	0	0	840	795	-45	-5	11	10
- Education & Training	250	250	0	0	340	315	-25	-7	6	5
- Custom Software	2,680	2,690	10	0	2,840	2,660	-180	-6	1	0
- Application Management	27	25	-2	-7	80	69	-11	-14	24	23
Systems Integration	515	490	-25	-5	1,130	800	-330	-29	17	10
- Equipment	140	140	0	0	235	185	-50	-21	11	6
- Application Software	95	95	0	0	400	210	-190	-48	33	17
- System Software	40	40	0	0	80	60	-20	-25	15	8
- Professional Services	230	205	-25	-11	380	330	-50	-13	11	10
- Other	10	10	0	0	36	17	-19	-53	29	11
Systems Operations	350	350	0	0	815	890	75	9	18	21
- Platform Operations	150	100	-50	-33	320	160	-160	-50	16	10
- Application Operations	190	200	10	5	450	550	100	22	19	22
- Desktop Services	15	50	35	233	46	180	134	291	25	29
Processing Services	1,185	1,185	0	0	1,420	1,235	-185	-13	4	1
- Transaction Processing	1,060	1,060	0	0	1,245	1,075	-170	-14	3	0
- Utility Processing	15	15	0	0	15	15	0	0	0	0
- Other Processing	110	110	0	0	160	145	-15	-9	8	6
Network Services	650	650	0	0	1,370	1,320	-50	-4	16	15
- Electronic Info Svcs	400	400	0	0	520	480	-40	-8	5	4
- Network Applications	200	200	0	0	675	730	55	8	28	30
- Network Management	50	50	0	0	175	110	-65	-37	28	17
System Software	2,300	2,300	0	0	3,050	2,800	-250	-8	6	4
- Mainframe	905	905	0	0	635	695	60	9	-7	-5
- Minicomputer	755	755	0	0	1,035	905	-130	-13	7	4
- Workstation/PC	640	640	0	0	1,380	1,200	-180	-13	17	13
Application Software	1,940	1,940	0	0	3,590	3,200	-390	-11	13	11
- Mainframe	155	155	0	0	120	114	-6	-5	-5	-6
- Minicomputer	535	535	0	0	730	436	-294	-40	6	-4
- Workstation/PC	1,250	1,250	0	0	2,740	2,650	-90	-3	17	16
Turnkey Systems	1,050	1,050	0	0	1,540	1,410	-130	-8	8	6
- Equipment	535	525	-10	-2	665	630	-35	-5	4	4
- Application Software	250	255	5	2	425	375	-50	-12	11	8
- System Software	12	12	0	0	17	17	0	0	7	7
- Professional Services	260	265	5	2	440	390	-50	-11	11	8
Equipment Services	3,500	3,500	0	0	3,700	3,600	-100	-3	1	1
- Equipment Maintenance	2,350	2,350	0	0	2,130	2,095	-35	-2	-2	-2
- Environmental Services	1,150	1,150	0	0	1,570	1,505	-65	-4	6	6
Grand Total Information Services	15,000	15,000	0	0	20,500	19,000	-1,500	-7	6	5

B

B-1

Economic Assumptions

A
European Exchange Rates

The following table, Exhibit B-1, shows the standard exchange rates used throughout the 1994 programme to consolidate country market data for overall European forecasts and vendor market shares.

Exhibit B-1

US Dollar and ECU Exchange Rates 1994

Country	Currency	US Dollar	ECU
Europe	$	1	1.266
France	FF	5.90	6.59
Germany	DM	1.74	1.94
United Kingdom	PS	0.676	0.753
Italy	Lira (K)	1.71	1.90
Sweden	Sek	8.34	9.32
Denmark	DK	6.79	7.56
Norway	NK	7.52	8.39
Finland	FM	5.79	6.35
Netherlands	Dfl	1.94	2.17
Belgium	BF	36.15	40.41
Switzerland	SF	1.39	1.65
Austria	Sch	12.19	13.82
Spain	Ptas	142.92	159.30
Ireland	IP	0.71	0.791
Portugal	Esc	176.7	197.10
Greece	Dra	249.35	280.00

Source: Financial Times January 1994

B

European Inflation Rates

Exhibit B-2 shows the average five-year inflation assumptions for each reported country and the changes from those used in reports produced in the previous year. All INPUT forecasts include the effects of inflation as well as natural market growth rates. For consistency, the same inflation rates are used throughout all the different market sector research and analysis during a calendar year, unless specified otherwise.

Exhibit B-2

Inflation Assumptions 1993 and 1994

Country	Assumption 1993-1998	Assumption 1994-1999	Change
France	2.3	1.9	-0.4
Germany	4.0	2.9	-1.1
United Kingdom	2.0	3.0	1.0
Italy	3.8	3.2	-0.6
Sweden	2.3	2.0	-0.3
Denmark	1.6	2.6	1.0
Norway	2.2	1.5	-0.7
Finland	0.2	2.0	1.8
Netherlands	1.9	2.0	0.1
Belgium	3.0	2.2	-0.8
Switzerland	2.3	1.7	-0.6
Austria	3.8	2.8	-1.0
Spain	4.5	3.4	-1.1
Portugal	5.8	4.8	-1.0
Greece	13.2	11.2	-2.0
Ireland	2.7	3.3	0.6
Eastern Europe	-	-	-
European Average	3.1	2.8	-0.3

Source: OECD December 1993

The economic growth measurements and predictions from the OECD, referred to in the text for each country, are listed in Exhibit B-3.

Exhibit B-3

GDP Growth Rate Assumptions;

Country	1992 (%)	1993 (%)	1994 (%) Forecast	1995 (%) Forecast
Austria	1.6	-0.3	1.8	2.7
Belgium	1.4	-1.3	1.5	2.6
Denmark	1.2	1.2	4.0	3.5
Finland	-3.8	-2.6	1.9	4.7
France	1.2	-0.9	1.8	2.9
Germany	2.1	-1.3	1.8	2.6
Greece	0.9	-0.1	1.0	1.6
Ireland	4.9	2.3	4.1	4.5
Italy	0.7	-0.7	1.5	2.6
Netherlands	1.4	0.2	1.4	2.8
Norway	3.4	2.2	4.3	2.9
Portugal	1.1	-0.5	1.2	2.3
Spain	0.8	-1.0	1.2	2.7
Sweden	-1.9	-2.1	2.7	2.9
Switzerland	-0.1	-0.6	1.5	2.5
United Kingdom	-0.6	1.9	2.8	3.2
EC	1.0	-0.4	1.9	2.8

Source: OECD 1994

C
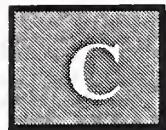
Definition of Terms

A
Introduction

INPUT's *Definition of Terms* provides the framework for all of INPUT's market analyses and forecasts of the information services industry. The structure is defined in Exhibit C-1.

One of the strengths of INPUT's market analysis services is the consistency of the underlying market sizing and forecast data. Each year INPUT reviews its industry structure and makes changes if they are required. When changes are made they are carefully documented and the new definitions and forecasts reconciled to the prior definitions and forecasts. INPUT clients have the benefit of being able to track market forecast data from year to year against a proven and consistent foundation of definitions.

B
Overall Definitions and Analytical Framework

1. Information Services

Information Services are computer/telecommunications-related products and services that are oriented toward the development or use of information systems. Information services typically involve one or more of the following:

- Use of vendor-provided computer processing services to develop or run applications or provide services such as disaster recovery or data entry (called *Processing Services*)

- A combination of computer equipment, packaged software and associated support services which will meet an application systems need (called *Turnkey Systems*)

- Packaged software products, including systems software or applications software products (called *Software Products*)

- People services that support users in developing and operating their own information systems (called *Professional Services*)

- The combination of products (software and equipment) and services where the vendor assumes total responsibility for the development of a custom integrated solution to an information systems need (called *Systems Integration*)

- Services that provide operation and management of all or a significant part of a user's information systems functions under a long-term contract (called *Systems Operations*)

- Services that support the delivery of information in electronic form — typically network-oriented services such as value-added networks, electronic mail and document interchange (called *Network Applications*)

- Services that support the access and use of public and proprietary information such as on-line databases and news services (called *Electronic Information Services*)

- Services that support the operation of computer and digital communication equipment (called *Equipment Services*).

In general, the market for information services does not involve providing equipment to users. The exception is where the equipment is part of an overall service offering such as a turnkey system, a systems operations contract or a systems integration project.

The information services market also excludes pure data transport services (i.e., data or voice communications circuits). However, where information transport is associated with a network-based service (e.g., electronic data interchange services), or cannot be feasibly separated from other bundled services (e.g., some systems operations contracts), the transport costs are included as part of the services market.

The analytical framework of the information services industry consists of the following interacting factors: overall and industry-specific business environment (trends, events and issues); technology environment; user information system requirements; size and structure of information services markets; vendors and their products, services and revenues; distribution channels; and competitive issues.

2. Market Forecasts/User Expenditures

All information services market forecasts are estimates of *User Expenditures* for information services. When questions arise about the proper place to count these expenditures, INPUT addresses them from the user's viewpoint: expenditures are categorised according to what users perceive they are buying.

By focusing on user expenditures, INPUT avoids two problems which are related to the distribution channels for various categories of services:

- Double-counting, which can occur by estimating total vendor revenues when there is significant reselling within the industry (e.g., software sales to turnkey vendors for repackaging and resale to end users)

- Missed counting, which can occur when sales to end users go through indirect channels such as mail order retailers.

Captive Information Services User Expenditures are expenditures for products and services provided by a vendor that is part of the same parent corporation as the user. These expenditures are not included in INPUT forecasts.

Noncaptive Information Services User Expenditures are expenditures that go to vendors that have a different parent corporation than the user. It is these expenditures which constitute the information services market analysed by INPUT and that are included in INPUT forecasts.

3. Delivery Modes

Delivery Modes are defined as specific products and services that satisfy a given user need. While *Market Sectors* specify *who* the buyer is, *Delivery Modes* specify *what* the user is buying.

Of the nine delivery modes defined by INPUT, six are considered primary products or services:

- Processing Services

- Network Services

- Professional Services

- Applications Software Products

- Systems Software Products

- Equipment Services.

The remaining three delivery modes represent combinations of these products and services, combined with equipment, management and/or other services:

- Turnkey Systems

- Systems Operations

- Systems Integration.

Section C describes the delivery modes and their structure in more detail.

4. Market Sectors

Market Sectors or markets are groupings or categories of the buyers of information services. There are three types of user markets:

- *Vertical Industry* markets, such as Banking, Transportation, Utilities, etc. These are called "industry-specific" markets.

- *Functional Application* markets, such as Human Resources, Accounting, etc. These are called "cross-industry" markets.

- *Other* markets, which are neither industry- nor application-specific, such as the market for systems software products and much of the on-line database market.

Specific market sectors used by INPUT are defined in Section E, below.

5. Trading Communities

Information technology is playing a major role in re-engineering, not just companies but the value chain or *Trading Communities* in which these companies operate. This reengineering is resulting in electronic commerce emerging where interorganisational electronic systems facilitate the business processes of the trading community.

- A trading community is the group or organisations — commercial and noncommercial — involved in producing goods or services

- Electronic commerce and trading communities are addressed in INPUT's EDI and Electronic Commerce Program.

6.   Outsourcing

Over the past few years a major change has occurred in the way clients are buying some information services. The shift has been labelled *outsourcing*.

INPUT views outsourcing as a change in the form of the client/vendor relationship. Under an outsourcing relationship, all or a major portion of the information systems function is contracted to a vendor in a long-term relationship. The vendor is responsible for the performance of the function.

INPUT considers the following submodes to be outsourcing-type relationships and in aggregate to represent the outsourcing market. See Exhibit C-1. Complete definitions are provided in Section C of this document. INPUT provides these forecasts as part of the corresponding delivery modes.

- *Platform Systems Operations* — The vendor is responsible for managing and operating the client's computer systems.

- *Applications System Operations* — The vendor is responsible for developing and/or maintaining a client's applications as well as operating the computer systems.

- *Network Management* — The vendor assumes full responsibility for operating and managing the client's data communications systems. This may also include the voice communications of the client.

Outsourcing Components INPUT's View

```
                        ┌─────────────────┐
                        │   Outsourcing   │
                        └─────────────────┘
              ┌────────────────┴────────────────┐
     ┌──────────────────┐              ┌──────────────────┐
     │ Systems Operations │            │ Professional Services │
     └──────────────────┘              └──────────────────┘
     ┌────────┼────────┐                        │
 ┌─────────┐ ┌──────────┐           ┌──────────────────────┐
 │Platforms│ │ Network  │           │ Applications Management │
 │Operations│ │Management│          └──────────────────────┘
 └─────────┘ └──────────┘
 ┌──────────┐  ┌─────────┐
 │Applications│ │ Desktop │
 │Operations │ │Services │
 └──────────┘  └─────────┘
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Source: INPUT
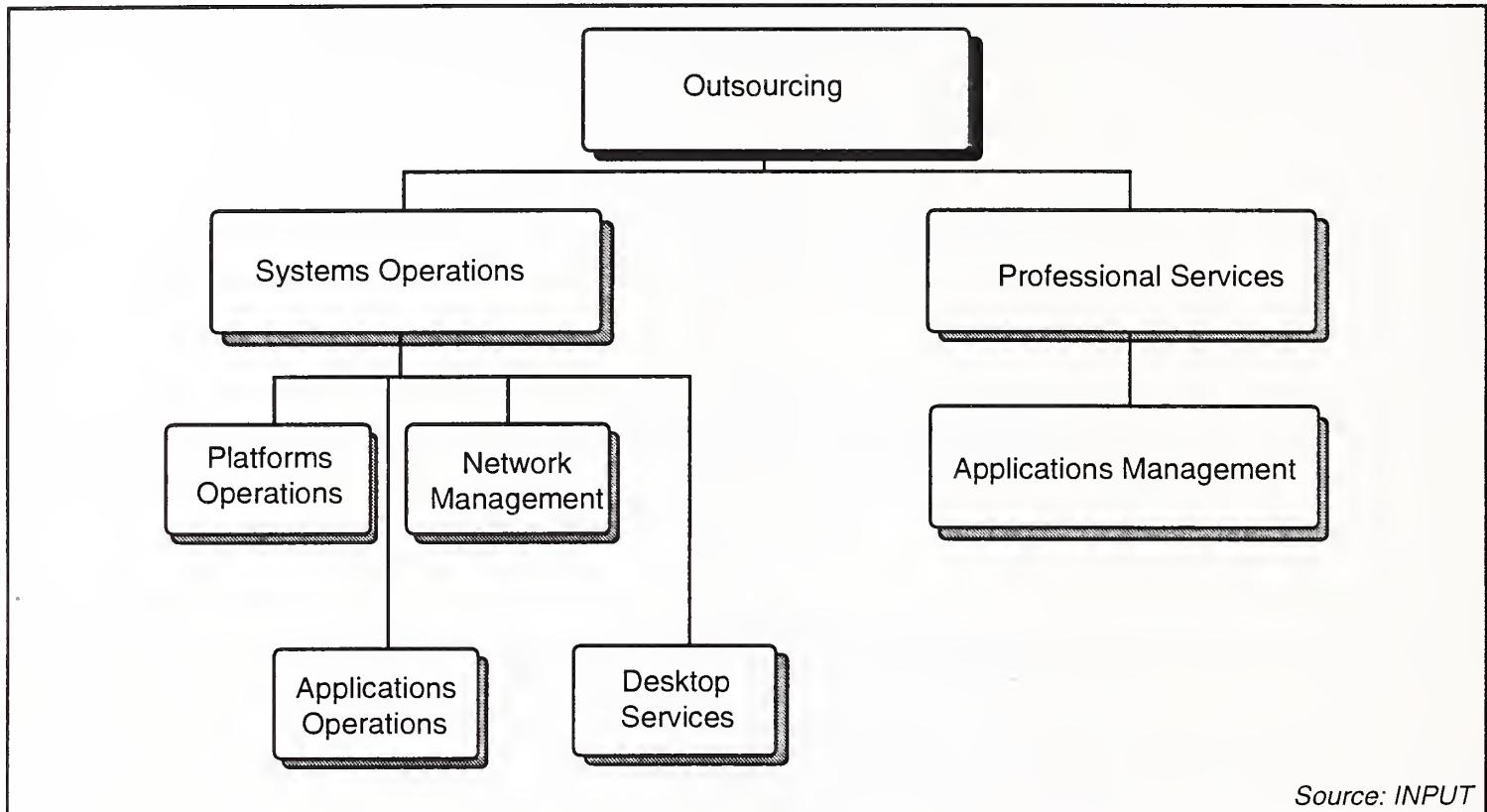
- *Applications Management / Maintenance* — The professional services vendor has full responsibility for developing and/or maintaining some or all of the applications systems that a client uses to support business operations. The services are provided on a long-term contractual basis.

- *Desktop Services* — The vendor assumes responsibility for the deployment, maintenance and connectivity between the personal computers and/or intelligent workstations in the client organisation. The services may also include performing the help-desk function. The services are provided on a long-term contractual basis.

C
Delivery Modes and Submodes

Exhibit C-2 provides the overall structure of the information services industry as defined and used by INPUT. This section of *Definition of Terms* provides definitions for each of the delivery modes and their submodes or components.

1. Software Products

INPUT divides the software products market into two delivery modes: systems software and applications software.

The two delivery modes have many similarities. Both involve purchases of software packages for in-house computer systems. Included are both lease and purchase expenditures, as well as expenditures for work performed by the vendor to implement or maintain the package at the user's sites. Vendor-provided training or support in operation and use of the package, if part of the software pricing, is also included here.

Expenditures for work performed by organisations other than the package vendor are counted in the professional services delivery mode. Fees for work related to education, consulting, and/or custom modification of software products are also counted as professional services, provided such fees are charged separately from the price of the software product itself.

a. Systems Software Products

Systems software products enable the computer/communications system to perform basic machine-oriented or user interface functions. INPUT divides systems software products into three submodes. See Exhibit C-3.

- *Systems Control Products* — Software programs that manage computer system resources and control the execution of programs. These products include operating systems, emulators, network control, library control, windowing, access control and spoolers.

- *Operations Management Tools* — Software programs used by operations personnel to manage the computer system and/or network resources and personnel more effectively. Included are performance measurement, job accounting, computer operation scheduling, disk management utilities and capacity management.

- *Applications Development Tools* — Software programs used to prepare applications for execution by assisting in designing, programming, testing, and related functions. Included are traditional programming languages, 4GLs, data dictionaries, database management systems, report writers, project control systems, CASE systems and other development productivity aids.

Exhibit C-2

Information Services Industry Structure

C-9

System Software Products	Applications Software Products	Turnkey Systems	Equipment Services	Professional Services

- Mainframe

- Minicomputer

- Workstation/PC

- Mainframe

-Minicomputer

- Workstation/PC

- Equipment

- Software Products

- Professional Services

- Equipment Maintenance
- Environmental Services

- Consulting

- Education & Training

- Software Development/ Maintenance

- Application Management/ Maintenance

Systems Integration	Systems Operations	Processing Services	Network Services

- Equipment

- Software Products

- Professional Services

- Other

- Platform Operation

- Application Operations

- Desktop Services

- Network Management

- Transaction

- Utility

- Other

- Electronic Information Services

- Network Applications

Source: INPUT

Exhibit C-3

Systems Software Products Market Structure

```
                    ┌─────────────────┐
                    │    Systems      │
                    │    Software     │
                    └─────────────────┘
                             │
        ┌────────────────────┼────────────────────┐
        │                    │                    │
┌───────────────┐    ┌───────────────┐    ┌───────────────────┐
│   Systems     │    │  Data Center  │    │   Applications    │
│   Control     │    │  Management   │    │ Development Tools │
└───────────────┘    └───────────────┘    └───────────────────┘
```

Systems Control

- Access Control
- Communications Monitors
- Micro-Mainframe Links
- Network Control
- Operating Systems
- Security Systems
- System Library Control
- Windowing Systems
- Other

Data Center Management

- Capacity Management
- Computer Operations
  Scheduling
- Data Center Management
- Disk Management
- Downtime/Repair
  Monitoring Management
- Job Accounting
- Performance Monitors
- Tape Management
- Utilities
- Other

Applications Development Tools

Program Development and Production Tools

- Applications Generators
- Assemblers
- Automatic Documentation
- Configuration Management
- Debugging Aids
- Languages
  (All Generations)
- Systems Development
  Control
- Retrieval Systems
- Translators
- 4GL
- I-CASE
- Other

Database Management Systems

- Database Management
  Systems
- Data Dictionaries
- Other

Source: INPUT

INPUT also forecasts the systems software products delivery mode by platform level: mainframe, minicomputer and workstation/PC.

b. Applications Software Products

Applications software products enable a user or group of users to support an operational or administrative process within an organisation. Examples include accounts payable, order entry, project management and office systems. INPUT categorises applications software products into two groups of market sectors. (See Exhibit C-4)

- *Industry Applications Software Products* — Software products that perform functions related to fulfilling business or organisational needs unique to a specific industry (vertical) market and sold to that market only. Examples include demand deposit accounting, MRPII, medical record keeping, automobile dealer parts inventory, etc.

- *Cross-Industry Applications Software Products* — Software products that perform a specific function that is applicable to a wide range of industry sectors. Examples include payroll and human resource systems, accounting systems, word processing and graphics systems, spreadsheets, etc.

INPUT also forecasts the applications software products delivery mode by platform level: mainframe, minicomputer and workstation/PC.

2. Turnkey Systems

A turnkey system is an integration of equipment (CPU, peripherals, etc.), systems software, and packaged applications software into a single product developed to meet a specific set of user requirements. Value added by the turnkey system vendor is primarily in the software and professional services provided. INPUT categorises turnkey systems into two groups of market sectors as it does for applications software products. (See Exhibit C-4)

Most CAD/CAM systems and many small business systems are turnkey systems. Turnkey systems utilise standard computers and do not include specialised hardware such as word processors, cash registers, process control systems or embedded computer systems for military applications.

Exhibit C-4

Application Products and Turnkey Systems

```
                    ┌─────────────────┐        ┌─────────────────┐
                    │  Applications   │        │    Turnkey      │
                    │Software Products│        │    Systems      │
                    └─────────────────┘        └─────────────────┘
                             │                          │
                    ┌──────────────┐          ┌──────────────┐
                    │   Cross-     │          │  Industry-   │
                    │  Industry    │          │  Specific    │
                    └──────────────┘          └──────────────┘
```

Office Systems	Accounting	Human Resources	Education & Training
• Integrated Office Systems	• General Ledger	• Human Resources Management	• Computer-Based Training
• Word Processing	• Accounts Payable	• Payroll	• Authoring Languages
• Desktop Publishing	• Accounts Receivable	• Benefits	
• Image Systems	• Billing/Invoicing		
• Electronic Publishing	• Costing		
• Document Imaging Software	• Fixed Assets		
	• International Accounting		
	• Purchasing		
	• Taxation		

Industry-Specific

- Discrete Manufacturing
- Process Manufacturing
- Transportation Services
- Utilities
- Telecommunications
- Retail Distribution
- Wholesale Distribution
- Banking and Finance
- Insurance
- Health Services
- Education
- Business and Technical Services
- Federal Government
- State and Local Government
- Miscellaneous Industries

Planning & Analysis	Engineering & Scientific	Other Cross-Industry
• Executive Information Systems	• Computer-Aided Design and Engineering	• Marketing Management
• Financial Modeling and Planning	• Structural Analysis	• Sales Analysis
• Spreadsheets	• Statistics/ Mathematics/ Operations Research	
• Project Management	• Mapping	

Source: INPUT

Computer manufacturers (e.g., IBM or DEC) that combine software with their own general-purpose hardware are not classified by INPUT as turnkey vendors. Their software revenues are included in the appropriate software category.

Most turnkey systems are sold through channels known as value-added resellers.

- *Value-Added Reseller (VAR):* A VAR adds value to computer hardware and/or software and then resells it to an end user. The major value added is usually applications software for a vertical or cross-industry market, but also includes many of the other components of a turnkey systems solution, such as professional services, software support, and applications upgrades.

Turnkey systems have three components:

- Equipment — computer hardware supplied as part of the turnkey system

- Software products — pre-packaged systems and applications software products

- Professional services — services to install or customise the system or train the user, provided as part of the turnkey system sale.

Exhibit C-5 contrasts turnkey systems with systems integration. Turnkey systems are based on available software products that a vendor may modify to a modest degree.

Exhibit C-5

The Customisation Spectrum

Systems Integration	Custom Turnkey	Turnkey
Degree of Customisation		

100%   50%   25%   0%
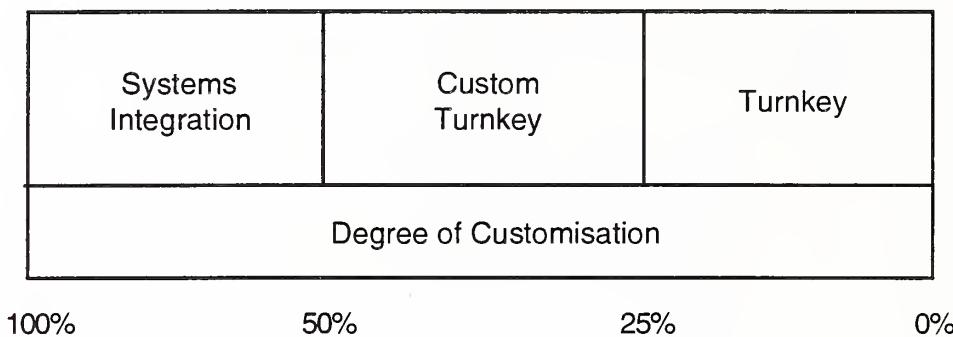
Source: INPUT

Exhibit C-6

Processing Services Market Structure

Processing Services

— Transaction Processing

— Utility Processing

— Other Processing Services
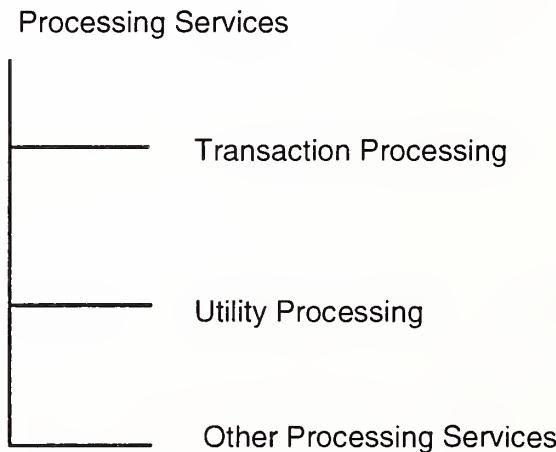
Source: INPUT

3. Processing Services

This delivery mode includes three submodes: transaction processing, utility processing, and "other" processing services. (See Exhibit C-6)

- *Transaction Processing* — Client uses vendor-provided information systems — including hardware, software and/or data networks — at the vendor site or customer site to process specific applications and update client databases. The application software is typically provided by the vendor.

- *Utility Processing* — Vendor provides basic software tools (language compilers, assemblers, DBMSs, graphics packages, mathematical models, scientific library routines, etc.), enabling clients to develop and/or operate their own programs or process data on the vendor's system.

- *Other Processing Services* — Vendor provides service — usually at the vendor site — such as scanning and other data entry services, laser printing, computer output microfilm (COM), CD preparation and other data output services, backup and disaster recovery, etc.

4. Systems Operations

Systems operations as a delivery mode was introduced in the 1990 Market Analysis and Systems Operations programs. Previously called Facilities Management, this delivery mode was created by taking the Systems Operations submode out of both Processing Services and Professional Services. For 1992 the submodes have been defined as follows.

Systems operations involves the operation and management of all or a significant part of the client's information systems functions under a long-term contract. These services can be provided in either of four distinct submodes where the difference is whether the support of applications, as well as data center operations, is included.

- *Platform systems operations* — The vendor manages and operates the computer systems, to perform the client's business functions, without taking responsibility for the client's application systems.

- *Applications systems operations* — The vendor manages and operates the computer systems to perform the client's business functions, and is also responsible for maintaining, or developing and maintaining, the client's application systems.

- *Network Management* — The vendor assumes responsibility for operating and managing the client's data communications systems. This may also include the voice communications of the client. A network management outsourcing contract may include only the management services or the full costs of the communications services and equipment plus the management services.

- *Desktop Services* — The vendor assumes responsibility for the deployment, maintenance and connectivity among the personal computers and/or workstations in the client organisation. The services may also include performing the help-desk function. Equipment as well as services can be part of a desktop services outsourcing contract.

Note: This type of client service can also be provided through traditional professional services where the contractual criteria of outsourcing are not present.

Systems operations vendors now provide a wide variety of services in support of existing information systems. The vendor can plan, control, provide, operate, maintain and manage any or all components of the client's information systems environment (equipment, networks, applications systems), either at the client's site or the vendor's site.

Note: In the federal government market, systems operation services are also defined by equipment ownership with the terms "COCO" (Contractor-Owned, Contractor-Operated), and "GOCO" (Government-Owned, Contractor-Operated).

5. Systems Integration (SI)

Systems integration is a vendor service that provides a complete solution to an information system, networking or automation development requirement through the custom selection and implementation of a variety of information system products and services. A systems integrator is responsible for the overall management of a systems integration contract and is the single point of contact and responsibility to the buyer for the delivery of the specified system function, on schedule and at the contracted price. (Refer to Exhibit C-7)

The components of a systems integration project are the following:

- *Equipment* — information processing and communications equipment required to build the systems solution. This component may include custom as well as off-the-shelf equipment to meet the unique needs of the project. The systems integration equipment category excludes turnkey systems by definition

- *Software products* — pre-packaged applications and systems software products

- *Professional services* — the value-added component that adapts the equipment and develops, assembles, or modifies the software and hardware to meet the system's requirements. It includes all of the professional services activities required to develop, implement, and if included in the contract, operate an information system, including consulting, program/project management, design and integration, software development, education and training, documentation, and systems operations and maintenance

- *Other services* — most systems integration contracts include other services and product expenditures that are not classified elsewhere. This category includes miscellaneous items such as engineering services, automation equipment, computer supplies, business support services and supplies, and other items required for a smooth development effort.

Exhibit C-7

Products/Services in Systems Integration Projects

Equipment

- Information systems

- Communications

Software Products

- Systems software

- Applications software

Professional Services

- Consulting

  - Feasibility and trade-off studies

  - Selection of equipment, network and software

- Program/project management

- Design/integration

  - Systems design

  - Installation of equipment, network, and software

  - Demonstration and testing

- Software development

  - Modification of software packages

  - Modification of existing software

  - Custom development of software

- Education/training and documentation

- Systems operations/maintenance

Other Miscellaneous Products/Services

- Site preparation

- Data processing supplies

- Processing/network services

- Data/voice communication services

Source: INPUT

6. Professional Services

This category includes four submodes: consulting, education and training, software development and applications management. Exhibit C-8 provides additional detail.

- *Consulting:* Services include management consulting (related to information systems), information systems reengineering, information systems consulting, feasibility analysis and cost-effectiveness studies and project management assistance. Services may be related to any aspect of the information system, including equipment, software, networks and systems operations.

- *Education and Training:* Services that provide training and education or the development of training materials related to information systems and services for the information systems professional and the user, including computer-aided instruction, computer-based education and vendor instruction of user personnel in operations, design, programming, and documentation. Education and training provided by school systems is not included. General education and training products are included as a cross-industry market sector.

- *Software Development:* Services include user requirements definition, systems design, contract programming, documentation, and implementation of software performed on a custom basis. Conversion and maintenance services are also included.

- *Applications Management:* The vendor has full responsibility for maintaining and upgrading some or all of the application systems that a client uses to support business operations and may develop and implement new application systems for the client.

An applications management contract differs from traditional software development in the form of the client/vendor relationship. Under traditional software development services the relationship is project based. Under applications management it is time and function based.

These services may be provided in combination or separately from platform systems operations.

Exhibit C-8

Professional Services Market Structure

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                        ┌─────────────────────┐
                        │ Professional Services│
                        └─────────────────────┘
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Applications Management**	Software Development/ Maintenance	Consulting*	Education & Training*
– Applications Maintenance	– User Requirements Definition	– Installation Planning	– Computer Operations Training
– Application Development	– Systems Design	– Network Planning and Design	– IS Management Training
– Application Support	– System Conversion	– Information Systems Audit	– Analyst/ Programmer Training
	– Data Base Design	– IS Planning	– Systems Use Training
	– Programming	– IS Security/Audit	– Video Instruction
	– Testing	– System Evaluation	– Other
	– System Modification	– Systems Evaluation	
	– Documentation/ Technical Writing	– IS Personnel Planning	
	– Network Development	– Systems Analysis	
	– Other	– IS Policies and Procedures Development	
		– Project Management	
		– Other	

*Related to computer systems, topics, or issues

**Vendor assumes full responsibility on contracted longer term basis

Source: INPUT

7. Network Services

Network services are a variety of telecommunications-based functions and operations. Network service includes two submodes, as shown in Exhibit C-9.

Exhibit C-9

Network Services Market Structure
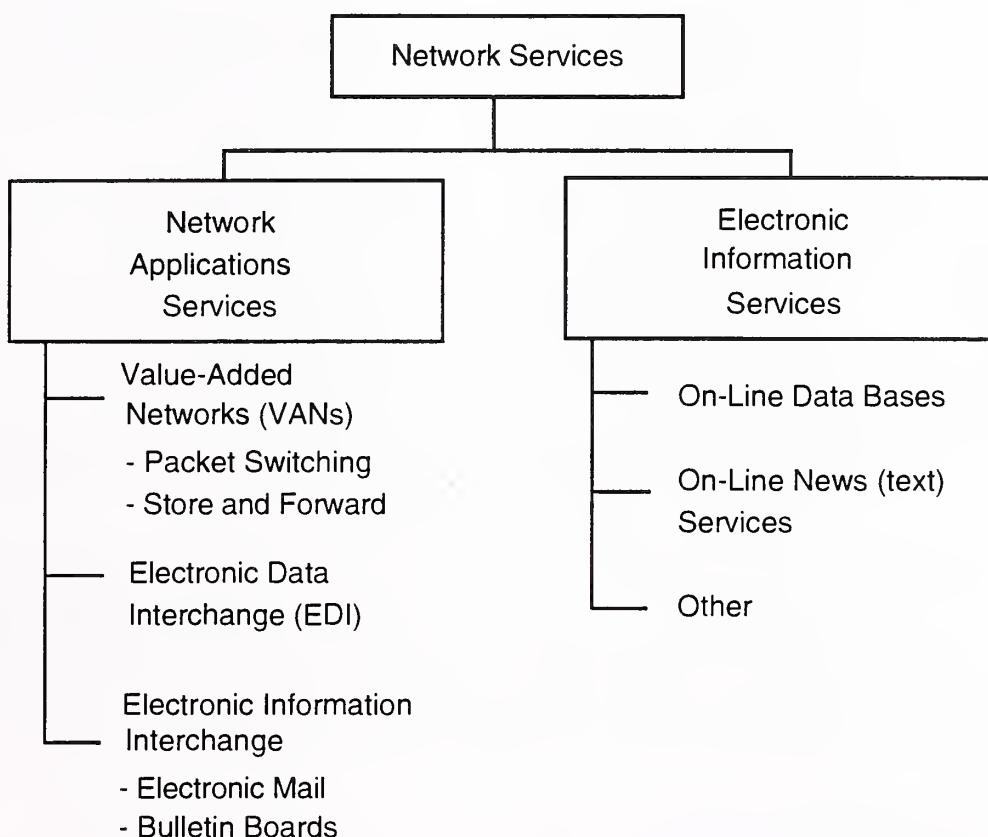
Source: INPUT

a. Electronic Information Services

Electronic information services are databases that provide specific information via terminal – or computer-based inquiry, including items such as stock prices, legal precedents, economic indicators, periodical literature, medical diagnosis, airline schedules, automobile valuations, etc. The terminals used may be computers themselves, such as communications servers or personal computers.

Users inquire into and extract information from the databases. They may load extracted data into their own computer systems; the vendor does not provide data processing or manipulation capability as part of the electronic information service and users cannot update the vendor's databases. However, the vendor may offer other services (network applications or processing services) that do offer processing or manipulation capability.

The two kinds of electronic information services are:

- *On-line Databases* — Structured, primarily numerical data on economic and demographic trends, financial instruments, companies, products, materials, etc

- Unstructured, primarily textual information on people, companies, events, etc. These are often news services.

While electronic information services have traditionally been delivered via networks, there is a growing trend toward the use of CD ROM optical disks to support or supplant on-line services, and these optical disk-based systems are included in the definition of this delivery mode.

b. Network Applications

Value-Added Network Services (VAN Services) — VAN services are enhanced transport services which involve adding such functions as automatic error detection and correction, protocol conversion, and store-and-forward message switching to the provision of basic network circuits.

While VAN services were originally provided only by specialised VAN carriers (Tymnet, Telenet, etc.), today these services are also offered by traditional common carriers (AT&T, Sprint, etc.). Meanwhile, the VAN carriers have also branched into the traditional common carriers' markets and are offering unenhanced basic network circuits as well.

Electronic Data Interchange (EDI) — Application-to-application electronic exchange of business data between trade partners or facilitators using a telecommunications network.

Electronic Information Interchange — The transmission of messages across an electronic network managed by a services vendor, including electronic mail, voice mail, voice messaging and access to Telex, TWX, and other messaging services. This also includes bulletin board services.

8. Equipment Services

The equipment services delivery mode includes two submodes. Both deal with the support and maintenance of computer equipment:

Equipment Maintenance — Services provided to repair, diagnose problems and provide preventive maintenance both on-site and off-site for computer equipment. The costs of parts, media and other supplies are excluded. These services are typically provided on a contract basis

Environmental Services — Composed of equipment and data center related special services such as cabling, air conditioning and power supply, equipment relocation and similar services.

D
Computer Equipment

These definitions have been included to provide the basis for market segmentation in the software products markets.

- *Computer Equipment* — Includes all computer and telecommunications equipment that can be separately acquired with or without installation by the vendor and not acquired as part of an integrated system. Unless otherwise noted in an INPUT forecast, computer equipment is only included where it is part of the purchase of services or software products (e.g., turnkey systems and systems integration).

- *Peripherals* — Includes all input, output, communications, and storage devices (other than main memory) that can be channel connected to a processor, and generally cannot be included in other categories such as terminals.

- *Input Devices* — Includes keyboards, numeric pads, card readers, light pens and track balls, tape readers, position and motion sensors, and analogue-to-digital converters.

- *Output Devices* — Includes printers, CRTs, projection television screens, micro graphics processors, digital graphics, and plotters.

- *Communication Devices* — Includes modem, encryption equipment, special interfaces, and error control.

- *Storage Devices* — Includes magnetic tape (reel, cartridge, and cassette), floppy and hard disks, solid state (integrated circuits), and bubble and optical memories.

- *Computer Systems* — Includes all processors from personal computers to supercomputers. Computer systems may require type- or model-unique operating software to be functional, but this category excludes applications software and peripheral devices and processors or CPUs not provided as part of an integrated (turnkey) system.

- *Personal computers* — Smaller computers using 8-, 16-, or 32-bit computer technology. Generally designed to sit on a desktop and are portable for individual use. Price generally less than $5,000.

- *Workstations* — High-performance, desktop, single-user computers often employing Reduced Instruction Set Computing (RISC). Workstations provide integrated, high-speed, local network-based services such as database access, file storage and back-up, remote communications, and peripheral support. These products usually cost from $5,000 to $15,000.

- *Minicomputer or midsize computers* — Minicomputers are generally priced from $15,000 to $350,000. Many of the emerging client/server computers are in this category.

- *Mainframe or large computers* — Traditional mainframe and supercomputers costing more than $350,000.

- *Client/server computing* — Client/server is an architecture that assembles applications software and databases, systems software, and computer and networking equipment into a usable form for the purpose of leveraging information technology investments.

Broadly defined, it can include any kind of server, such as file servers and network servers, that are accessed by any kind of client, including a non intelligent terminal. INPUT has elected to use the narrower and newer definition, by which application and data processing is shared between a client and a server. It is through the act of sharing that the greatest benefit is derived in terms of leveraging information technology investments. It is also the cause of the greatest change for vendors and users.

E
Sector Definitions

1. Industry Sector Definitions

INPUT structures the information services market into industry sectors such as process manufacturing, insurance, transportation, etc. The definitions of these sectors are based on the 1987 revision of the Standard Industrial Classification (SIC) code system. The specific industries (and their SIC codes) included under these industry sectors are detailed in Exhibit C-10.

INPUT includes all delivery modes except systems software products and equipment services in industry market sectors. See Exhibit C-9 and section E-3 (Delivery Mode Reporting by Sector).

Note: SIC code 88 is Personal Households. INPUT does not currently analyse or forecast information services in this market sector.

2. Cross-Industry Sector Definitions

INPUT has identified seven cross-industry market sectors. These sectors or markets involve multi-industry applications such as human resource systems, accounting systems, etc.

- In order to be included in an industry sector, the service or product delivered must be specific to that sector only. If a service or product is used in more than one industry sector, it is counted as cross-industry.

- INPUT only includes the turnkey systems, applications software products, and transaction processing services in the cross-industry sectors.

Exhibit C-10

Industry Sector Definitions

Industry Sector	SIC Code	Description
Discrete Manufacturing	23xx	Apparel and other finished products
	25xx	Furniture and fixtures
	27xx	Printing, publishing and allied industries
	31xx	Leather and leather products
	34xx	Fabricated metal products, except machinery and transportation equipment
	35xx	Industrial and commercial machinery and computer equipment
	36xx	Electronic and other electrical equipment and components, except computer equipment
	37xx	Transportation equipment
	38xx	Instruments; photo/med/optical goods; watches/clocks
	39xx	Miscellaneous manufacturing industry
Process Manufacturing	10xx	Metal mining
	12xx	Coal mining
	13xx	Oil and gas extraction
	14xx	Mining/quarrying nonmetalic minerals
	20xx	Food and kindred products
	21xx	Tobacco products
	22xx	Textile mill products
	24xx	Lumber and wood products, except furniture
	26xx	Paper and allied products
	28xx	Chemicals and allied products
	29xx	Petroleum refining and related industries
	30xx	Rubber and miscellaneous plastic products
	32xx	Stone, clay, glass and concrete products
	33xx	Primary metal industries
Transportation Services	40xx	Railroad transport
	41xx	Public transit/transport
	42xx	Motor freight transport/warehousing
	43xx	U.S. Postal Service
	44xx	Water transportation
	45xx	Air transportation (including airline reservation services in 4512)
	46xx	Pipelines, except natural gas
	47xx	Transportation services (including 472x, arrangement of passenger transportation)

Exhibit C-10 (Cont'd)

Industry Sector Definitions (Cont'd)

Industry Sector	SIC Code	Description
Telecommunications	48xx	Communications
Utilities	49xx	Electric, gas and sanitary services
Retail Distribution	52xx	Building materials
	53xx	General merchandise stores
	54xx	Food stores
	55xx	Automotive dealers, gas stations
	56xx	Apparel and accessory stores
	57xx	Home furniture, furnishings and accessory stores
	58xx	Eating and drinking places
	59xx	Miscellaneous retail
Wholesale Distribution	50xx	Wholesale trade - durable goods
	51xx	Wholesale trade - nondurable goods
Banking and Finance	60xx	Depository institutions
	61xx	Nondepository credit institutions
	62xx	Security and commodity brokers, dealers, exchanges and services
	67xx	Holding and other investment offices
Insurance	63xx	Insurance carriers
	64xx	Insurance agents, brokers and services
Health Services	80xx	Health services
Education	82xx	Educational services

Exhibit C-10 (Cont'd)

Industry Sector Definitions (Cont'd)

Industry Sector	SIC Code	Description
Business Services	65xx	Real estate
	70xx	Hotels, rooming houses, camps, and other lodging places
	72xx	Personal services
	73xx	Business services (except hotel reservation services in 7389)
	7389x	Hotel reservation services
	75xx	Automotive repair, services and parking
	76xx	Miscellaneous repair services
	78xx	Motion pictures
	79xx	Amusement and recreation services
	81xx	Legal services
	83xx	Social services
	84xx	Museums, art galleries, and botanical/zoological gardens
	86xx	Membership organizations
	87xx	Engineering, accounting, research, management, and related services
	89xx	Miscellaneous services
Federal Government	9xxx	
State and Local Government	9xxx	
Miscellaneous Industries	01xx	Agricultural production - crops
	02xx	Agricultural production - livestock/animals
	07xx	Agricultural services
	08xx	Forestry
	09xx	Fishing, hunting and trapping
	15xx	Building construction - general contractors, operative builders
	16xx	Heavy construction - contractors
	17xx	Construction - special trade contractors

Source: INPUT

The seven cross-industry markets are:

Accounting — consists of applications software products and information services that serve such functions as:

- General ledger
- Financial management
- Accounts payable
- Accounts receivable
- Billing/invoicing
- Fixed assets
- International accounting
- Purchasing
- Taxation
- Financial consolidation

Excluded are accounting products and services directed to a specific industry, such as tax processing services for CPAs and accountants within the business services industry sector.

Human Resources — consists of application solutions purchased by multiple industry sectors to serve the functions of human resources management and payroll. Examples of specific applications within these two major functions are:

- Employee relations
- Benefits administration
- Government compliance
- Manpower planning
- Compensation administration
- Applicant tracking
- Position control
- Payroll processing.

Education and Training — consists of education and training for information systems professionals and users of information systems delivered as a software product, turnkey system or through processing services. The market for computer-based training tools for the training of any employee on any subject is also included.

Office Systems consists of the following six categories:

Integrated Office Systems (IOSs) — IOSs integrate the applications that perform common office tasks. Typically these tasks include the following core applications, all of which are accessed from the same terminal, microcomputer or workstation:

- Electronic mail

- Decision support systems

- Time management

- Filing systems.

IOSs enable office workers to utilise applications that are resident on a number of hosts or servers, thus creating a corporate communication environment through integrating line-of-business software with personal software productivity tools. IOSs capitalise on the cross-platform architectures of major vendors. Major hardware vendors such as IBM, Data General, Digital, Hewlett-Packard and NCR all offer IOSs.

Work flow and groupware products are also included within the IOS definition.

Word Processing — Word processing is the most common microcomputer application and is a basic application within the office systems sector. Word processing addresses several levels of functionality, from the production of simple correspondence to large document generation where many people within different departments have input.

Desktop Publishing (DTP) — Desktop publishing refers to the page-design software programs that allow small and mid-sized organisations to publish printed documents (brochures, catalogues, newsletters, reports, etc.) from the desktop. The primary functions of DPT software include the manipulation of the following functions:

- Layout and design of columns

- Text manipulation (font type)

- Graphic manipulation

- Print Control (colour type, paper type).

Electronic Publishing — Electronic publishing includes composition, printing, and editing software for documents containing multiple typefaces and graphics including charts, diagrams, computer-aided design (CAD) drawings, line art, and photographs. Electronic publishing products may also have different data formats such as text, graphs, images, voice and video.

The fundamental difference between electronic publishing and desktop publishing is that electronic publishing encompasses a method of document management and control from a single point regardless of how many authors/locations work on a document. Desktop publishing (DTP) on the other hand, is considered a personal productivity tool and is generally a lower-end product residing on a personal computer.

Graphics — Graphics packages that are used for presentations or freehand drawings and/or are ancillary to desktop publishing are part of office systems. Thus, the graphics component of office systems sector includes the following elements:

Presentation graphics represent the bulk of office systems graphics. Most presentations involve a combination of graphs and text. They are used to communicate a series of messages to an audience rather than to analyse data.

Paint and line art drawing programs are used for illustrations while page layout programs are used to integrate text and graphics.

Electronic form programs allow users to create and print forms in-house. Some applications work with OCR scanners allowing users to scan pictures and logos directly on the forms.

Document Imaging Software — The software that allows users to manipulate (store, retrieve, print) images that have been scanned from paper documents. The applications that imaging software generates include: full text retrieval, document management, and database management. Document imaging software is a component of an imaging system. Hardware components of imaging systems include: scanners, image servers, workstations, optical drives, printers, and storage devices.

Engineering and Scientific encompasses the following applications:

- Computer-aided design and engineering (CAD and CAE)

- Structural analysis

- Statistics/mathematics/operations research

- Mapping/GIS.

- Computer-aided manufacturing (CAM) or CAD that is integrated with CAM is excluded from the cross-industry sector as it is specific to the manufacturing industries. CAD or CAE that is dedicated to integrated circuit design is also excluded because it is specific to the semiconductor industry.

Planning and Analysis consists of software products and information services in four application areas:

- Executive Information Systems (EIS)

- Financial modelling or planning systems

- Spreadsheets

- Project management.

Other encompasses marketing/sales and electronic publishing application solutions.

- Sales and marketing includes:

- Sales analysis

- Marketing management

- Demographic market planning models.

3. Delivery Mode Reporting by Sector

This section describes how the delivery mode forecasts relate to the market sector forecasts. Exhibit C-11 summarises the relationships.

- *Processing services* — The transaction processing services submode is forecasted for each industry and cross-industry market sector. The utility and other processing services submodes are forecasted in total for the general market sector.

- *Turnkey systems* — Turnkey systems is forecasted for the 15 industry and 7 cross-industry sectors. Each component of turnkey systems is forecasted in each sector.

- *Applications software products* — The applications software products delivery mode is forecasted for the 15 industry and 7 cross-industry sectors. In addition, each forecast is broken down by platform level: mainframe, minicomputer and workstation/PC.

- *Systems operations* — Each of the systems operations submodes is forecasted for each of the 15 industry sectors.

- *Systems integration* — Systems integration and each of the components of systems integration are forecasted for each of the 15 industry sectors.

- *Professional services* — Professional services and each of the submodes is forecasted for each of the 15 industry sectors.

- *Network services* — The network applications submode of network services forecasted for each of the 15 industry sectors.

  Industry and cross-industry electronic information services are forecast in relevant market sectors. The remainder of electronic information services is forecasted in total for the general market sector.

- *Systems software products* — Systems software products and its submodes are forecasted in total for the general market sector. Each submode forecast is broken down by platform level: mainframe, minicomputer and workstation/PC.

- *Equipment services* — Equipment services and its submodes are forecasted in total in the general market sectors.

Exhibit C-11

Delivery Mode versus Market Sector Forecast Content

Delivery Mode	Submode	Market Sectors		
		Industry Sectors	Cross-Industry Sectors	General
Processing Services	Transaction Utility Other	X	X	 X X
Turnkey Systems		X	X	
Applications Software Products		X	X	
Systems Operations	Platform Applications	X X		
Systems Integration		X		
Professional Services		X		
Network Services	Network Applications Electronic Information Services	X X		 X
Systems Software Products				X
Equipment Services				X

Source: INPUT

F
Vendor Revenue and User Expenditure Conversion

The size of the information services market may be viewed from two perspectives: vendor (producer) revenues and user expenditures. INPUT defines and forecasts the information services market in terms of user expenditures. User expenditures reflect the markup in producer sales when a product such as software is delivered through indirect distribution channels (such as original equipment manufacturers (OEMs), retailers and distributors). The focus on user expenditure also eliminates the double counting of revenues that would occur if sales were tabulated for both producer (e.g., Lotus) and distributor (e.g., ComputerLand).

For most delivery modes, vendor revenues and user expenditures are fairly close. However, there are some areas of significant difference. Many microcomputer software products, for example, are marketed through distribution channels. To capture the valued added through these distribution channels, adjustment factors are used to convert estimated information services vendor revenues to user expenditures.

For some delivery modes, including software products, systems integration and turnkey systems, there is a significant volume of intra-industry sales. For example, systems integrators purchase software and subcontract the services of other professional services vendors. Turnkey vendors incorporate purchased software into the systems they sell to users.

To account for such intra-industry transactions, INPUT uses conversion ratios to derive the estimate of end-user expenditures.

Exhibit C-12 summarises the net effect of the various ratios used by INPUT to convert vendor revenues to user expenditure (market size) figures for each delivery mode.

Exhibit C-12

Vendor Revenue to User Expenditure Conversion

Delivery Mode	Vendor Revenue Multiplier
Applications Software Products	1.18
Systems Software Products	1.10
Systems Operations	0.95
Systems Integration	0.95
Professional Services	0.99
Network Services	0.99
Processing Services	0.99
Turnkey Systems	0.95
Equipment Services	0.99

Source: INPUT